OCTOBER '61

MODERN TEXTILES MAGAZINE

Specializing in Man-Made Fibers and Blends since 1925

FIBERS

FABRICS

FINISHES

For Eastman's R. L. CHURCHILL a big new job—make Kodel a household word—story page 21

MILLMAN'S GUIDE TO WASH-WEAR FINISHES

Predictable crimping of manmade fibers

Simple test for creel draft variation

Ireland's brand new tufting plant

AND 11 MORE HELPFUL ARTICLES AND TIMELY REPORTS

A SKILLED HAND IN CHEMISTRY...AT WORK FOR YOU

An Invitation

to dyers, printers and finishers

to investigate products now available from

Nopco Chemical Company

and its subsidiary Jacques Wolf & Co.

PRINTING

☐ **Supergum™ H** A cold-water-soluble powder used to make a thickening paste low in solids and of high viscosity. Gives full flow for both roller and screen printing and excellent stability in both acid and alkaline media.

☐ **Superclear®** A prepared gum solution free of all impurities. Used for machine and roller printing. Imparts sharp outline and fine detail.

☐ **Hydrosulfite AWC** (for application and discharge printing) Sodium formaldehyde sulfoxylate, available in lumps, pea or rice size, as well as powder. It is used for application printing of vat colors or for discharge printing. May also be used for stripping wool, acetate and other fibers.

STRIPPING

☐ **Hydrozin®** A normal zinc formaldehyde sulfoxylate used for discharge printing on acetate grounds and for stripping wool and synthetic fibers.

VAT DYEING AND STRIPPING

☐ **Hydrosulfite of Soda Conc.** A pure, full-strength sodium hydrosulfite used as a reducing agent for dyeing vat colors and for stripping colors from any type of fabric.

SOFTENING

☐ **Nopcotex® NP-25** Outstanding napping agent for cotton and synthetics. Features: non-yellowing; stable in resin formulations; excellent fiber lubricant.

☐ **Nopcotex V** An excellent, non-yellowing cationic softener for application to cotton, wool and synthetic fabrics. Can be used with resins or as a pure finish.

☐ **Polymul® MS-40** A polyethylene-wax emulsion recommended as a pure finish and top softener to improve abrasion resistance. Facilitates the cutting and sewing operations.

☐ **Nopcotex B** A solubilized glyceryl monostearate, providing a full soft hand on cotton; offered in a powder form at 100% activity.

Please send me more information on the products checked.

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Title_____

Company_____

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Yarn carrier research...

only at Sonoco!

The *only* yarn carrier research facility in the world is located at the Sonoco plant in Hartsville, South Carolina. Here are the scientific and technical specialists, the modern equipment and the experience needed to solve yarn carrier problems.

Through the years, most major improvements in the area of textile paper carriers can be credited to Sonoco. Progressive development from the crude, handmade paper cone of 1899 to the close-tolerance, machine-made product of today is typical of how Sonoco has kept pace with the technical advances of the textile industry.

Continuous research at Sonoco covers all phases of manufacture and end use of paper cones, tubes, cores and spools. Every effort is directed toward developing products for use in producing better textiles at lower cost.

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3096

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MODERN
TEXTILES MAGAZINE *

October, 1961 Vol. 42, No. 10

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Established 1925

* * *

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* * *

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Synthetic Organic Chemical Manufacturers Association ..... 41 E. 42nd St., New York
Textile Distributors Institute, Inc. ..... 469 Seventh Ave., New York

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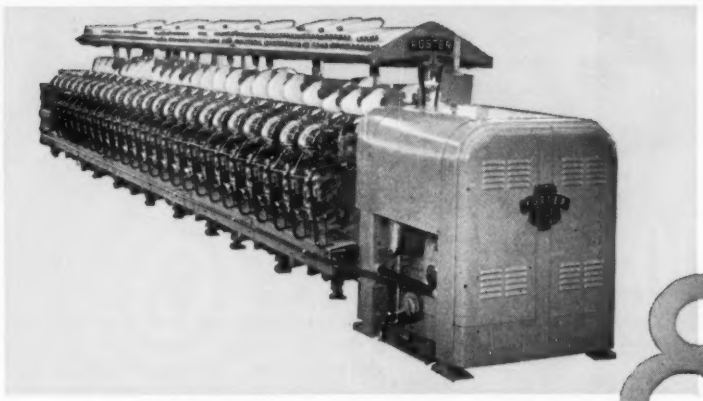
FOSTER MODEL 506 AUTOMATIC YARN WINDER



It's New!

It's Available

NOW!

IT BENEFITS YOU IN THESE 8 WAYS!

1. Increases operator productivity by 50%.*
2. Winds at twice the speed of our manual winder.
3. Requires less floor space than our manual winder.
4. Prevents wild yarn (butterflies), tangles, bobbin rings, crossed ends, uneven package density and rough yarn.
5. Eliminates gauging of package diameter by hand.
6. Winds any type of open wind putup, including a steep taper (9° 36') knitting cone.
7. The Model 506 cone is an even better package than the Model 102 cone (standard for the sales yarn market for many years), partly due to electronic tension.
8. Investment required is no more than for our manual winders with same capacity.

*Substantiated and documented in mill tests, under production conditions.

AUTOMATIC FEATURES

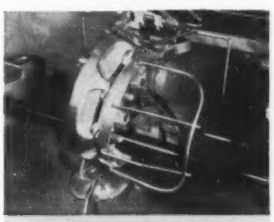
Only those operations which will *not* endanger yarn or package quality have been automated. These include threading up, slubbing and cleaning, disposal of empty bobbins, gauging full cones, donning full bobbins and doffing empty bobbins.

SIMPLIFICATION & SPEEDING UP OF MANUAL OPERATIONS

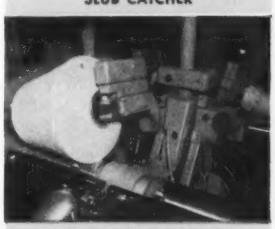
To keep the mill investment required within practical limits and in order to assure top yarn and package quality, which is so vital to sales yarn spinners, donning and doffing of cones, providing bobbin supply and knot tying are still done manually. However, providing the bobbin supply and tying knots have been so simplified that altogether they require only 10/100 of a minute (see illustrations). Wild yarn, tangles, bobbin rings, crossed ends, uneven package density and rough yarn (which are unavoidable at times with automatic knot tying) are definitely prevented on the Foster Model 506.

SEND FOR MODEL 506 BROCHURE

If you are interested in increasing the productivity of your winder operators by 50% in less floor space than you now require; if you are interested in doing this *without* jeopardizing yarn and package quality, find out more about the Foster Model 506 Automatic Winder — send for our brochure, "The Practical Road to Automatic Winding", or ask us to send a representative to talk with you. No obligations.

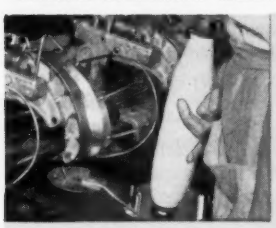


ELECTRONIC TENSION AND SLUB CATCHER



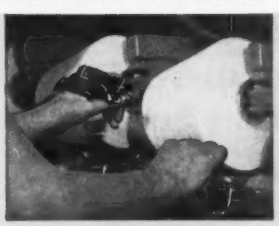
AUTOMATIC SIZE STOP MECHANISM

MANUAL OPERATIONS WHICH TAKE ONLY 10/100 OF A MINUTE AND PROTECT YARN QUALITY

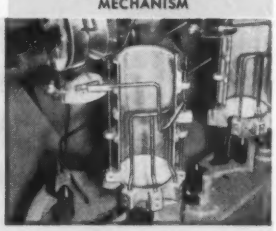


DROPPING BOBBIN IN CHUTE

TYING KNOT WITH HIGH SPEED INSTRUMENT AND TESTING — ALL WITH LEFT HAND



RESTARTING SPINDLE WITH RIGHT HAND



AUTOMATIC SUPPLY BOBBIN EXCHANGER

211-1

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A YARN WINDER FOR EVERY PURPOSE

Westfield, Massachusetts, U. S. A.

Member of American Textile Machinery Association

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Here for the first time a pressure-system ring which distributes either grease or oil around the circumference with equal effectiveness. The improved lubrication is permitting higher speeds with longer traveler life.

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FITS ALL SYSTEMS:
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Chemstrand Acrylic Yarn

Two new developments, under way at the Chemstrand Technical Center, Decatur, Ala., have been disclosed. One is a continuous filament textured acrylic yarn which will probably find its first application in carpeting, and the other is the use of solution-dyed Acrilan acrylic staple in awning fabrics. The awning fabric is nearer to commercial application than the textured filament yarn, according to Dr. C. W. Gaylor, director of applications, research and service at the center.

Wool-Kodel Blends

Eastman Chemical Products, Inc., reported that leading mills are currently developing and styling a wide range of fabrics on the woolen system in blends of 65% wool and 35% Kodel polyester fiber. A company spokesman said this is the first time such wool and polyester blend fabrics have been styled in a variety of weaves, patterns and colors. Burlington Woolen Co. is spearheading development of the new blends.

Wool Shrink-Proofing

A new process for shrink-proofing wool fabrics has been unveiled by the Wool and Mohair Laboratories, a research division of the U. S. Department of Agriculture. Dr. William L. Wasley, head of fiber chemistry investigation at Albany, Calif., said the new process involved the application of a permanent plastic "skin" to the wool fiber, thus enabling the finished fabric to be machine washed "without appreciable shrinkage."

Studies of a variety of all-wool garments treated with the process, called "interfacial polymerization," showed that there was little or no shrinkage after repeated home-style launderings, while untreated garments undergoing the same amount of laundering revealed a great deal of shrinkage.

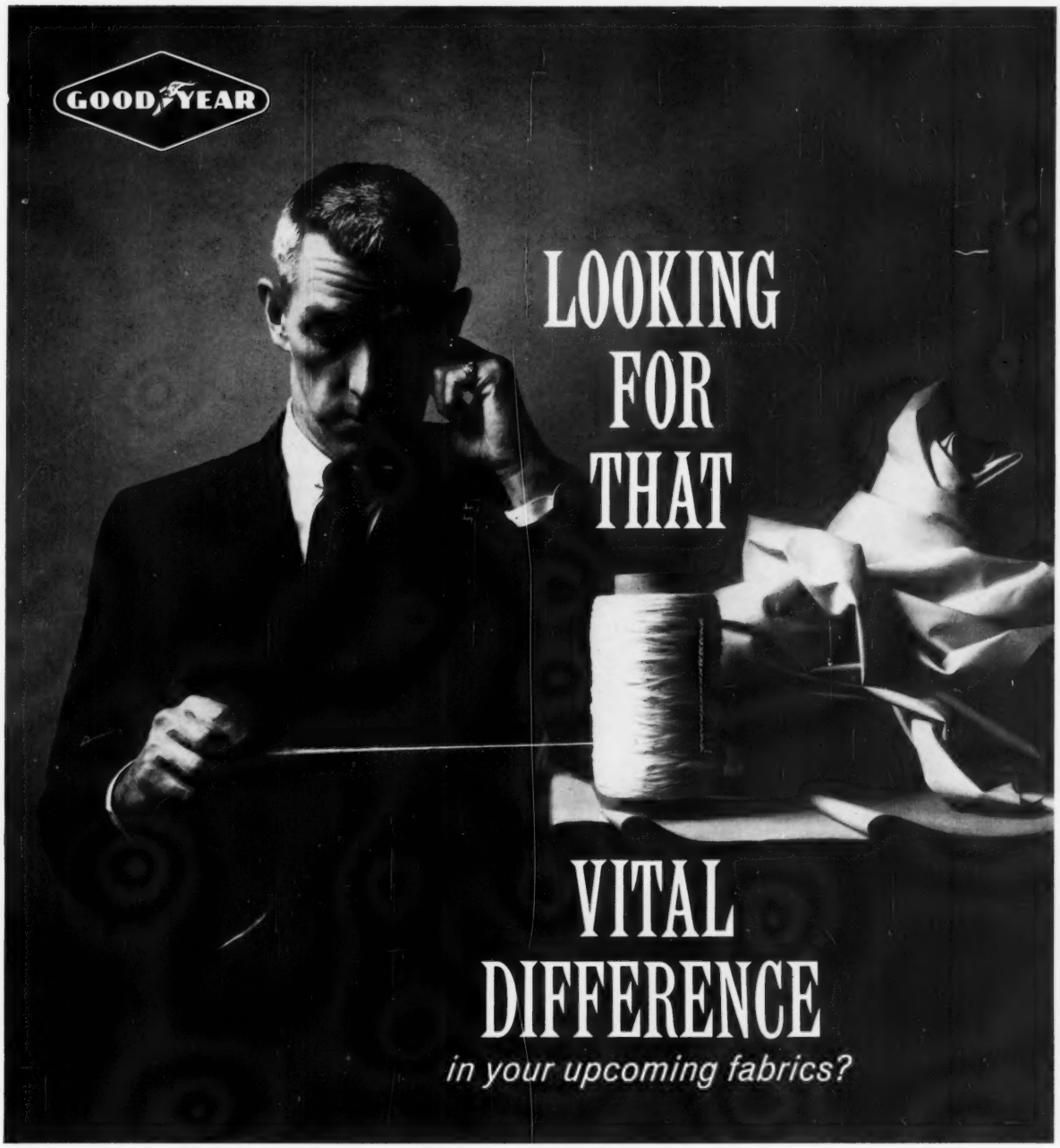
Celanese Fall Campaign

Color photographs of 20 model room settings, designed and created by Dorothy Draper, spearhead Celanese Fibers Co.'s Fall consumer advertising campaign. The promotion, "Scene Changers," is designed to show consumers how to use ready-mades as the quickest and easiest way to redecorate a room in a matter of minutes. Merchandise from 20 manufacturers figure in the model rooms, and include ready-made curtains, draperies, cafe curtains, bedspreads and shower curtains.

Four-color ads will appear in October issues of leading magazines. Retail stores participating in the promotion will be column-listed in each of the ads. More than 100 stores are expected to participate in the "Scene Changers" promotion. Celanese also has prepared a number of merchandising aids to help stores sell the ready-made merchandise, including a new consumer booklet featuring Dorothy Draper suggestions.

Receives Olney Medal

Fred Fortress, manager, dyeing and finishing laboratories, Celanese Fibers Co., Charlotte, N .C., is the recipient of the 1961 Olney Medal of the American Association of Textile Chemists and Colorists. The medal is presented by the AATCC for outstanding scientific achievement in the field of textile chemistry.



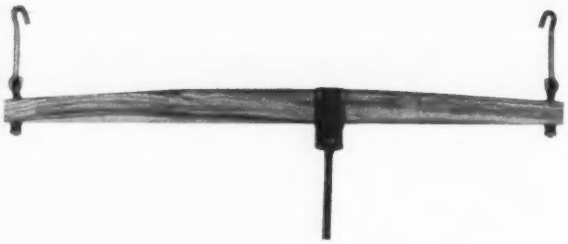
You may already have it. You do—if it contains VYCRON polyester, America's most advanced self-care fiber by Beaunit Mills, Inc.

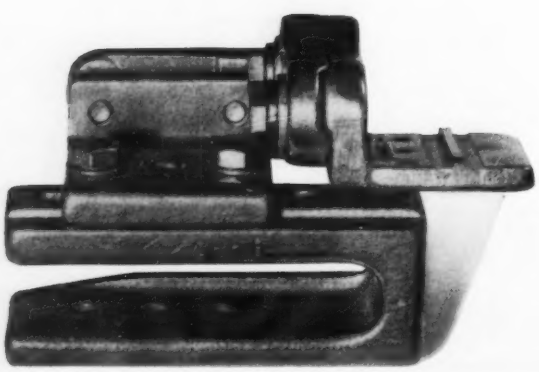
What makes Vycron different? VITEL — the outstanding polyester resin by Goodyear. VYCRON or any fiber spun from VITEL offers remarkable yarn strength, exceptional dyeability and color-fastness, excellent resistance to pilling, unusual affinity for dyestuffs, plus a unique softness.

To put selling vitality into your line, investigate VYCRON and VITEL. The facts are yours when you write Goodyear, Chemical Division, Dept. J-9476, Akron 16, Ohio. Lots of good things come from Goodyear.

Vitel by GOODYEAR

Northcool suit by Sagner of Vycott, a blend of 65% Vycron polyester fiber and 35% cotton, by Spinco Fabrics Inc.
Other fabric shown by Wamsutta Mills, division of M. Lowenstein & Sons, Inc., New York, N. Y.
Northcool — T. M. Sagner Inc., Frederick, Md.; Vycron — T. M. Beaunit Mills, Inc. Fibers Division, N. Y., N. Y.; Vitel — T. M. The Goodyear Tire & Rubber Company, Akron, Ohio





Draper repair parts are designed to give the maximum in loom performance ...day in, day out ...year after year.

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The Mark of Quality

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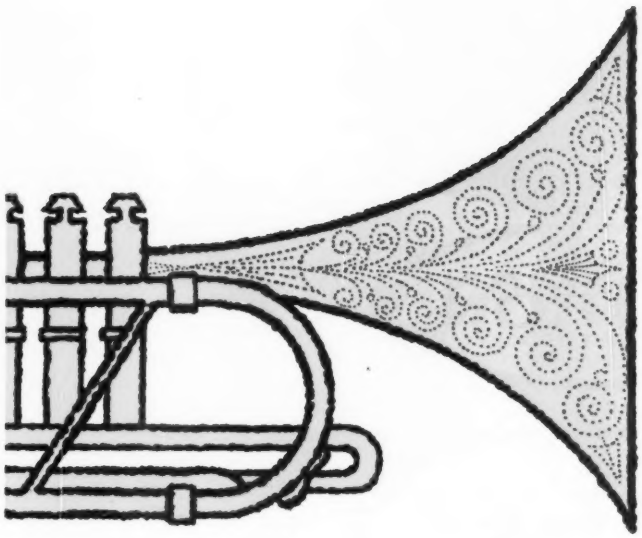

pardon us

while we blow

our own horn

Can't help braggin'! . . . *We've got something to blow our horn about!*

It's DY-LOK—a great new fiber improvement that is fast becoming the recognized ideal in upholstery fabrics: It's beautiful, it's durable and—best of all—it's *COMFORTABLE!*—a combination of elements that spells *Buy-Appeal!* Lots of fibers produce pretty fabrics. Most all have acceptable durability. But, for all-important built-in *COMFORT*, it's DY-LOK that *really has it!*

You can be down-right miserable in the best sprung chair in the world—if the fabric doesn't "*breathe*". Comfort depends upon a fabric being properly *absorbent* so that air can circulate freely around the body and allow moisture to evaporate!

Plastic fibers—vinyl, nylon, etc.—don't "*breathe*". They're pretty, but they don't "breathe". They're cold in winter. They're hot in summer. They're *un*-natural fibers. *They* don't "breathe". DY-LOK *does!*

That's why more and more manufacturers are recognizing the importance of DY-LOK. It combines so many advantages: *Natural Comfort*, maximum *fade-resistance*, complete *washability*, excellent *durability*. Write for the whole wonderful story of DY-LOK . . .

DY-LOK®

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EASTMAN VEREL® MODACRYLIC FIBER

EASTMAN® CHROMSPUN COLOR-LOCKED ACETATE

EASTMAN KODEL® POLYESTER FIBER

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EASTMAN CHEMICAL PRODUCTS, INC., *subsidiary of Eastman Kodak Company*, KINGSPORT, TENNESSEE

Invitation

to the man who wants to see **new**

crimping effects . . .

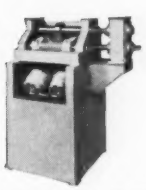
Besides giving synthetics the characteristics of natural fibers, crimping can be used to create entirely new fiber effects. Their appearance and hand can be altered in many ways on Turbo Crimpers, with very predictable results. Fibers of every weight and stiffness can be crimped accurately for easier handling.

Send samples of your fibers to Turbo for processing. Or better yet, bring your fibers to Turbo. See for yourself the variety of crimping effects that can be achieved on Turbo Machines — dull lustres or high sheens, soft hand or stiff finishes. At Turbo, you can watch as Turbo Crimpers work their magic on your own fibers. Call or write today for an appointment. Telephone ULysses 5-5131.

TURBO

TURBO MACHINE COMPANY, LANSDALE, PA., U. S. A.

Shown is the delivery end of the Turbo DC Crimper. Adjustable air cylinders control the roll pressure and pressures within the stuffing box.



The Turbo Model W Tow Crimper is a precision machine for rugged service in crimping synthetic tow and extremely heavy work on sliver.

This compact Model CC Turbo Crimper produces uniform crimp at high production speeds. Knob on the front of machine is used to obtain variations in crimp.

In clover

...Once in a while, everything clicks. You style your line just right, price it right, sell it right, and—wow! Doesn't happen often enough, but it happens...Well, one thing that can help it happen is the right choice of fibers. Choose Du Pont fibers and you're investing in the best known, most trusted and preferred man-made fibers in the business. And Du Pont keeps bolstering that preference through a vigorous advertising program on network TV and radio, in magazines and newspapers. . . . Feature Du Pont fiber trademarks on your labels, in your advertising and in your selling plans. It pays!

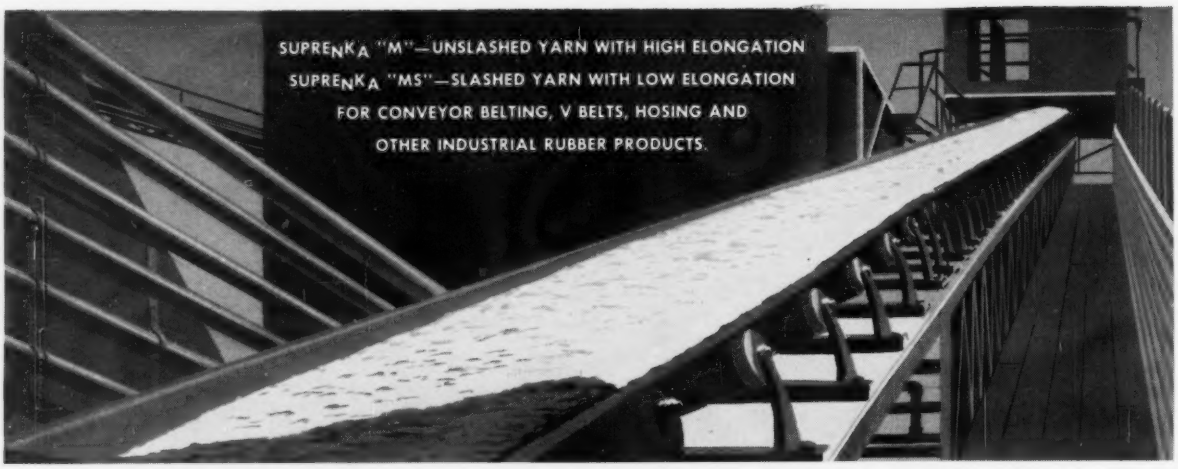
GET A SELLING EDGE WITH DU PONT NYLON "ORLON"* "DACRON"**

ACRYLIC FIBER POLYESTER FIBER

DU PONT REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

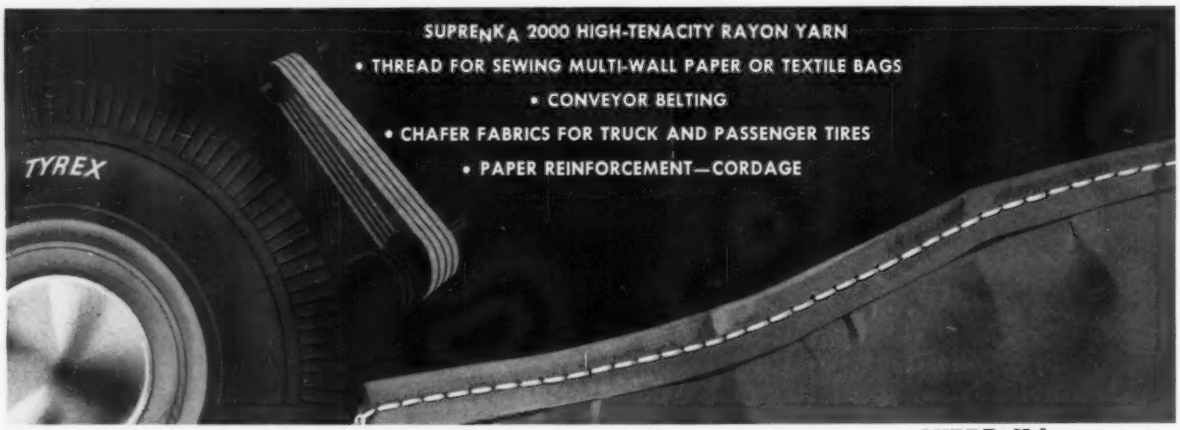
*Du Pont's registered trademark for its acrylic fiber. **Du Pont's registered trademark for its polyester fiber.


SUPRENKA "M"—UNSLASHED YARN WITH HIGH ELONGATION
SUPRENKA "MS"—SLASHED YARN WITH LOW ELONGATION
FOR CONVEYOR BELTING, V BELTS, HOSING AND
OTHER INDUSTRIAL RUBBER PRODUCTS.

New symbol of yarn power for industry...

SUPRENKA®

No job is too tough for Suprenka, Enka's high-tenacity, low-cost industrial rayon yarns—yarns made stronger to last longer. Name the job, and you'll find a superior Suprenka yarn engineered to handle it smoothly, efficiently, economically.


SUPRENKA 2000 HIGH-TENACITY RAYON YARN
• THREAD FOR SEWING MULTI-WALL PAPER OR TEXTILE BAGS
• CONVEYOR BELTING
• CHAFER FABRICS FOR TRUCK AND PASSENGER TIRES
• PAPER REINFORCEMENT—CORDAGE
TYREX

New! American Enka Launches High Modulus Industrial Yarn Called SUPRENKA® Hi Mod™

This new high-tenacity rayon yarn has been engineered for end-uses where high modulus, negligible wet or thermal shrinkage, and high strength are required.

Suprenka Hi Mod provides excellent stability during processing because of its low shrinkage when heated or moistened, and in use the new yarn has low growth under load.

Contact Industrial Sales Dept., American Enka Corporation, Enka, N. C. MOhawk 7-1311 or 350 Fifth Avenue, New York 1, N. Y. PE 6-2300 or the District Sales Office nearest you.

American ENKA Corporation, Enka, N. C. • Producer of nylon • rayon • yarns • fibers

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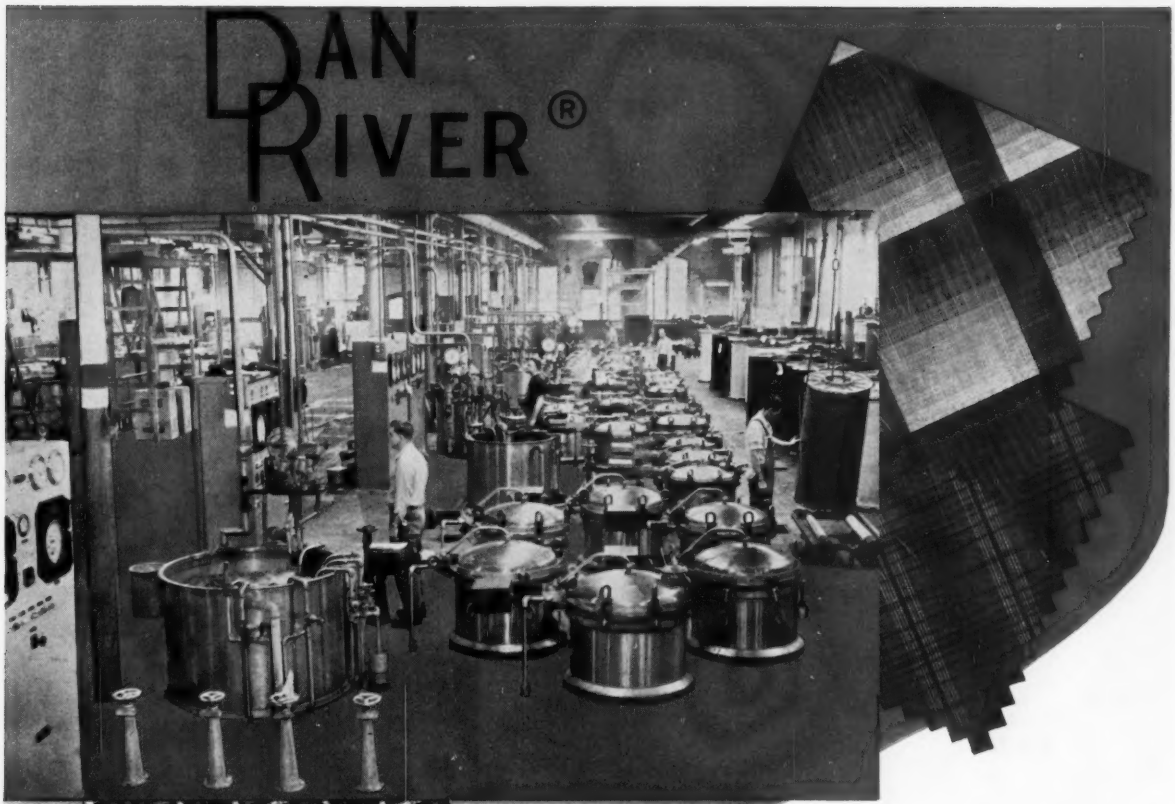
DAN RIVER®



A BIG NAME IN APPAREL AND HOUSEHOLD FABRICS

A well known and highly respected fabric producer for many years, Dan River's growth and expansion since World War II can only be expressed by one word—PHENOMENAL.

We are proud that we have been privileged to participate in Dan River's many multi-million dollar modernization projects through the years.

Since 1940 we have installed 67 production kiers in the Danville plants and 9 kiers in one of the Alabama plants. Machinery arrangements permit dye lots to range from 100 pounds to 2000 pounds of beams or cheeses.

During the same period Dan River's Research Department has installed 12 small dyeing machines ranging from 1 pound to 40 pounds per machine.

40th ANNIVERSARY

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WORLD'S LARGEST PRODUCERS OF PRESSURE DYEING & DRYING MACHINERY

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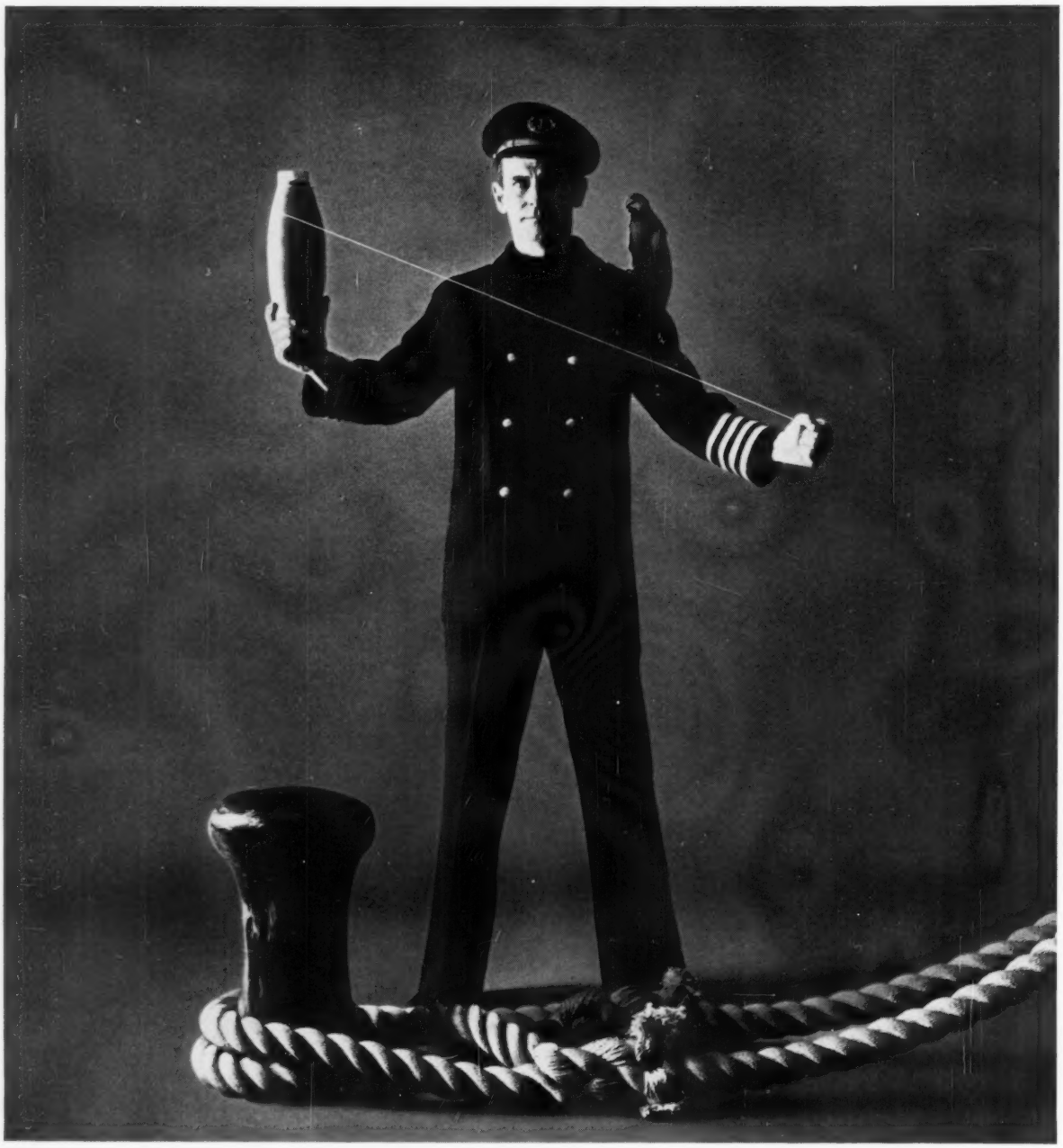

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MODERN TEXTILES
Magazine

Publisher's Viewpoint

The Import Outlook: Four Points to Watch

Is the federal government really moving to give long overdue help to the United States textile industry in its efforts to combat the destructive effects of low wage foreign imports? Will the executive branch of the government carry out the program of relief for our industry outlined in President Kennedy's seven point program made public last May?

With a degree of hopefulness that may be characterized as guarded optimism, the textile industry has adopted an attitude of wait and see. This open-minded position was evident last month at the annual meeting of the Northern Textile Association in Poland Spring, Maine. And it was set forth in persuasive terms by William F. Sullivan, president of the Association.

"As to our future from a Government policy point of view," Mr. Sullivan said, "it is too early to make final judgments on the outcome of the developments of the last nine months. We would be unwise to be depressed, hasty or emotional." He noted that the American textile industry is in a new phase of activities. He pointed to the following positive results of the industry's efforts to find relief from excessive low wage imports: the report of the Pastore Committee last February, the President's seven point program of May 2nd, and the international agreements at Geneva and Tokyo.

"Having secured a recognition of the problems of our industry," Mr. Sullivan said, "we now face a new situation—the working out with Government of practical and realistic solutions."

He noted that there are several critical areas in which the course the Government will adopt can be tested during the next few months. The first of these will be the response to the industry petition now before the Office of Civil and Defense Mobilization asking that this executive agency find that textile imports threaten the industry's ability to meet military needs in case of an emergency. When the OCDM informs the president that textile imports weaken our internal economy and threaten national security, Mr. Sullivan pointed out, the President is then clothed with the statutory power which he needs to deal with this threat. "Until there is an OCDM finding, the President is without real authority to back up that which he requests at the bargaining tables of Geneva, Tokyo, Hong Kong or elsewhere."

Another test of the Government's intentions, Mr. Sullivan said, it, to what extent it will enforce the one-year Geneva agreement. In other words, is the fiscal level of imports to be treated as a *floor* or as a *ceiling* on imports for the 12 months beginning September 30th?

A third test will be the Government's policy toward the manifestly unjust system now in force under which foreign buyers of cotton are able to purchase it at prices currently 8½ cents a pound less than the prices charged domestic mills. "Will the Government tolerate" Mr. Sullivan asked, "a differential in raw cotton prices created by it to continue to erode our industry without corrective action?"

Some reason to believe that the industry's guarded optimism so well expressed by Mr. Sullivan is not without justification came on the next day of the meeting. Hickman Price Jr., Assistant Secretary, United States Department of Commerce told the group that the Federal Government would implement the recent Geneva agreement to restrict imports for the year ending September 30, 1962, to the level of the year which ended June 30, 1961. This base period, he said, is more favorable to the American textile industry than the similar period for 1959 and 1960. He also said that measures would be taken to police this restriction by means of a greatly expanded month-to-month scrutiny of imports.

With regard to the two-price system for cotton, Mr. Price was even more reassuring. He said that this pricing system was unmoral and unprincipled, and that "something will be done to end it."

A. H. McCullough

TEXTILE NEWS

World Wide

FIBER CONGRESS WILL HEAR the views of U.S. textile manufacturer, J. Spencer Love, on the "next ten years in the textile industry." Announcement that Love, head of textile giant Burlington Industries, will speak at the Second World Congress of Manmade Fibers in London May 1-4, 1962 was made recently. Some 3,000 delegates from 50 countries are expected to attend.

PUERTO RICO TEXTILE workers will receive higher minimum wages, it is expected after recommendations of a review committee are approved in Washington. The recommendations increase current minimums roughly by 10%. Some specific increases will be: hook rug machine operators from 76 cents an hour to 83½ cents; workers in yarn manufacture from 68 cents to 75 cents.

PAKISTAN AND ENGLAND AGREE to the importation into Britain of 42 million yards of Pakistani cloth during the next 12 months, about 4 million more than last year. Pakistan also reports that the European Common Market has promised to increase cloth imports from Pakistan by 60% over the preceding 12 months' level. To meet this increased demand the Pakistan Government is urging mills to step up output.

ARGENTINA WILL GET two new wool processing plants, both in Rio Negro province. One plant will be set up with European machinery by a local yarn and knitwear producer, Masllorens Hermanos S.A. The second plant will be equipped for wool scouring, spinning and dyeing. It will have an annual capacity for 4.4 million pounds of grease wool.

INDIA WILL GROW sea island cotton in Madras State under a new plan recently approved by the Government. Sponsored by the Indian Central Cotton Committee, the plan aims to produce, in time, a large amount of extra long staple cotton for India's mills, thus reducing their dependence on imports of this grade.

ARGENTINE DU PONT AFFILIATE, Ducilo, S.A. plans to double its textile nylon capacity and construct new facilities for turning out nylon tire yarn. When completed in 1962, the expanded equipment at Ducilo's Berazategui plant will have a total capacity of 5.5 million pounds of textile nylon and 6.6 million pounds of tire yarn. Ducilo will continue to make rayon tire yarn.

TOYO SPINNING TO MAKE polyester fiber under a license from Goodyear Tire & Rubber Co. of U.S. Under the new arrangement, Toyo Spinning Co. will become the third producer of polyester fibers in Japan. The others are Toyo Rayon Co. and Teikoku Rayon Co.

ENGLISH POLYPROPYLENE PLANT, now under construction by Imperial Chemical Industries at Wilton, will have a capacity of 5 million pounds of filament yarn a year. Tradenamed Ulstron, ICI's propylene yarn is priced today at $1 to $1.14 a pound. ICI was licensed last year to produce polypropylene by Italy's Montecatini.

NIGERIA MAY GET Japanese cotton mill if a survey planned for the near future results in an affirmative report. Some time ago, the Nigerian Government suggested that Japanese interests consider establishing a 20,000 spindle plant complete with dyeing and finishing equipment in the new African nation.

IRISH KNITTERS SEEK to increase sales of their double knit apparel fabrics in the U.S. market. Banded together under the name Irish Knitters Group and supported by the encouragement of the Irish Government, the knitters will seek, by advertising and publicity, to sell more of their cloth to American cutters. To support their effort, they will set up minimum quality standards. Their goal is a volume of $2 million a year in the American market.

NEW TWIST IN RASCHEL carpet knitting has been worked out by an English inventor, H. W. H. Grau. Pile fabrics, including carpets, are knitted by feeding card web directly to the raschel latch needle machine. Donaldson Brothers are developing Grau's invention. The method seems best suited for knitting loop pile fabrics using long staple fiber.

GROWTH OF TUFTING in England and Europe has brought rush of orders to Singer-Cobble's English plant in Blackburn. This affiliate of Singer-Cobble of U.S. plans to expand its capacity to produce its big tufting machines.

KNITTING SHOW TURNOUT at Manchester, England, Oct. 11-21 is expected to set record. Some 250 exhibitors will participate in the Exhibition, more than half of them from outside Britain.

Eastman's progress

FROM ACETATE TO POLYESTER

Eastman, second largest producer of acetate, is moving ahead to become a formidable multi-fiber producer with its own special polyester, Kodel. Eastman's aim: to make Kodel second to none in this crowded market

By Jerome Campbell
EDITOR, MODERN TEXTILES MAGAZINE

ALREADY FORMIDABLY ENTRENCHED in textiles with more than 30 years' experience behind it in fiber manufacturing, Eastman Chemical Products is preparing for a big new push toward hoped-for success with its Kodel polyester fiber. Headed by vice president Robert L. Churchill, a seasoned marketing team currently is full of enthusiasm for Kodel's advantages as a new apparel fiber. These men are determined that Eastman's polyester in the next year or two shall become a major new fiber as well known to textile insiders and consumers as any fiber that has preceded it in the great rough and obstacle-strewn manmade fiber steeplechase.

The task before Churchill and his associates is to establish Kodel as a basic textile fiber with a place in the production plans of every ambitious mill as well as a household word among millions of consumers. To this assignment Churchill's team brings a textile marketing skill derived from decades of selling acetate, and the specially noteworthy triumph in the immediate textile past of marketing Chromspun—a household word if there ever was one.

At this writing, the Eastman textile marketing group is moving with the assurance of people who believe they have a winner. They are in fact elated by the belief that Kodel is well ahead, in many important textile properties, of other polyester fibers available or shortly to be available in quantity. John Sherrill, Eastman's manager of textile marketing, speaks for all of them when he sums up Kodel's good points in this way: outstanding resilience, low specific gravity, increased cover, a desirable softness and good resistance to pilling. These advantages have enabled Kodel to find so far an encouraging acceptance in men's suits and slacks, sport coats, and dress shirts; in women's blouses, lingerie, and rainwear. Appearing in the current fall season are a promising group of fabrics woven of yarns spun on the woolen system which combine ratios of Kodel and wool ranging from 35% Kodel up to 70%. The softness, fine hand and worsted-like qualities of these yarn-dyed fancy suitings and coatings suggest to many who have seen them a new injection of vitality into woolen constructions. They see, as a result, a strong new wave of acceptance for woolen fabrics in both men's and women's apparel.

The introduction of Eastman's polyester fiber three years ago, hard on the heels of its modacrylic, Verel, opened a new era of broadening activity as a multi-fiber producer for Eastman, long a stalwart in the production of acetate. Eastman Chemical Products, Inc., to set down for the record its corporate parentage, is a subsidiary of Eastman Kodak Co. Its function is to market the fiber, chemical and plastics products of Tennessee Eastman Co. and Texas Eastman Co., Eastman Kodak's manufacturing divisions based on the huge complex of chemical plants located in Kingsport, Tennessee and Longview, Texas.

Eastman Kodak Co., as everyone knows, is famous not only in the United States but throughout the world for photographic film and cameras and all things pictorial and photographic. The history of its founder George Eastman is also widely known as the story of an inventive genius with an equally great gift for business success. And closely related in the popular mind with Kodak and George Eastman is Rochester, New York, where over the decades, the Kodak Co. has built a complex of plants and laboratories that have made the city the photographic capital of the world. The philanthropies of George Eastman, particularly in the field of music and notably the Eastman School of Music and the Rochester Symphony Orchestra, have also contributed to the fame of the city and its close identity with Eastman Kodak.

How then, the curious may ask, did Eastman Kodak get into the business, in a very substantial way, of producing manmade fibers? During the 1920's the demand grew increasingly strong for cellulose acetate safety film to replace the widely used inflammable and impermanent cellulose nitrate film. After a disastrous fire in a Cleveland Hospital, said to have been caused by spontaneous combustion of stored cellulose nitrate X-ray film, the need to speed up the manufacture of cellulose acetate film stock became

urgent. To expand the production of safety film on a low-cost basis, Eastman Kodak management was told by its research chemists that greatly increased supplies of acetate were necessary. Equipment was set up at Eastman's plant at Kingsport, Tennessee to provide a huge volume of acetate output—far more than was needed for film manufacture. To find a profitable use for this increased supply of cellulose acetate, Eastman decided to go into the manufacture of acetate yarn. In 1930, Eastman produced its first acetate yarn at its new fiber spinning plant in Kingsport. A year later, the new yarn was sold to mills by Eastman's sales agency in New York, A. M. Tenney Associates.

In the Eastman tradition, the company spared no effort to make its range of acetate yarns the equal of any on the market. During the thirties, Eastman's commitment to acetate and its expansion in the textile field went on at a rapid rate. Acetate yarn, because of its well-known advantageous properties of luster, drapability and excellent wearing qualities, was greatly in demand. To overcome the one great hurdle to the use of acetate in fabrics and apparel—its difficulty in dyeing, Eastman moved into the manfacture of specially researched and engineered dyes for acetate. From 1937, when the first line of Eastman colors for acetate was introduced, the Tennessee Eastman Co. grew steadily in importance and skill as a producer of acetate dyes.

Eastman's fully ripened know-how in the technology of acetate coloration linked to its established position as a major producer of the yarns led in 1952 to another major textile advance for the company. This was the introduction of its range of solution-dyed yarns which were given the now famous tradename Chromspun. By putting the color into the acetate spinning dope, Eastman, with one brilliant stroke, lifted acetate from the position of being difficult to dye even with the best dyes and the best know-how into a position of color-fastness to light and washing and immunity to atmospheric "gas" fading unsurpassed by any other yarns, natural or manmade. If one were forced to make a choice among the many successes of Eastman in the textile field, one would, following popular consensus throughout textiles, select Eastman's development of Chromspun solution-dyed yarns, along with the courageously executed merchandising strategy of Eastman's marketing people that has made the tradename Chromspun virtually the equivalent of a generic name for solution-dyed yarns. Having been successful with its Chromspun yarns, Eastman has tirelessly defended its copyrighted trademark, not stopping at lawsuits when management deemed them necessary.

Chromspun acetate yarns are still a big element in the Eastman textile operation; and since 1952 improvement in the quality of these solution-dyed yarns has been great, as has been the growth in the range of colors in which Eastman supplies them.

In 1956, Eastman, cutting lose from cellulosic fibers for the first time, plunged into the new era of manmade fibers. The company brought out Verel, a modified acrylic fiber, or "modacrylic" to use the generic name for this group of fibers established by the recent federal fiber labeling law. Why did Eastman introduce Verel? Largely, Churchill says, because the company was in a good position to make it out of raw materials it was producing at low cost in its other chemical manufacturing operations. Verel, which Churchill describes as a "specialty fiber," has a number of worthwhile textile properties. Among these are toughness, softness and notably, nonflammability. Verel has found acceptance as a blending fiber in

(Continued on page 64)

John R. Sherrill

Amos H. Griffin

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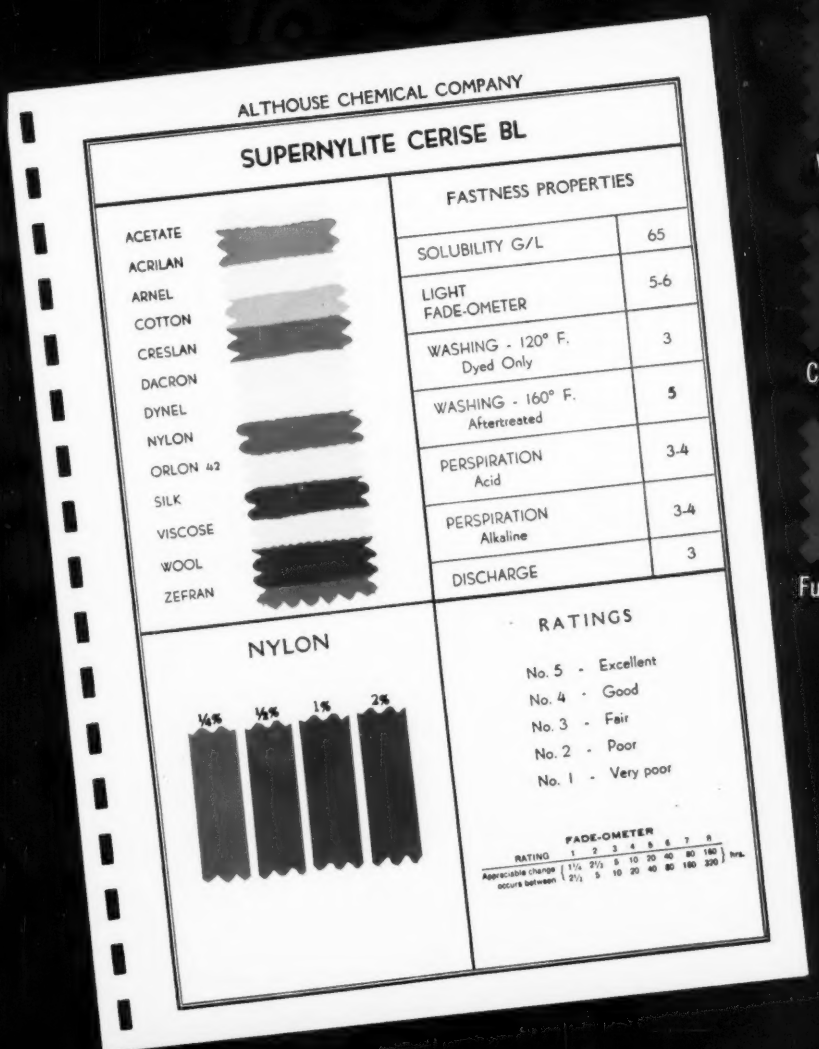

Violet Glace | Crushed Raspberry | Deep Claret

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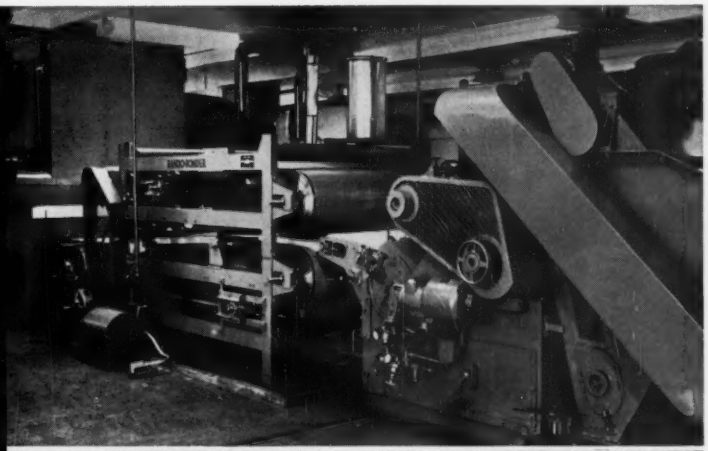

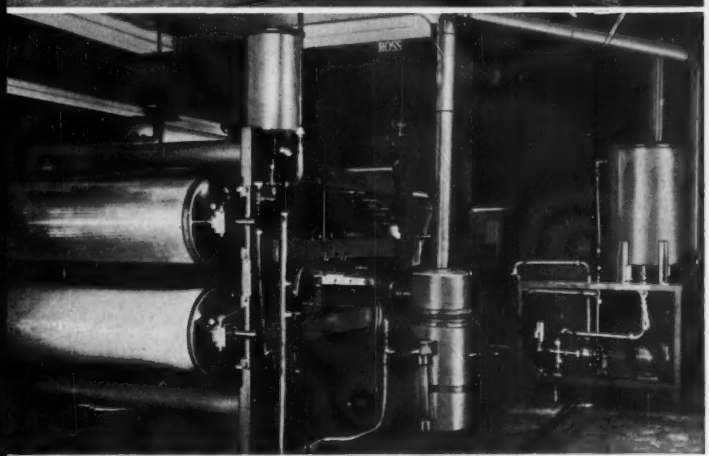

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Installation photographs courtesy of Celanese Corporation.

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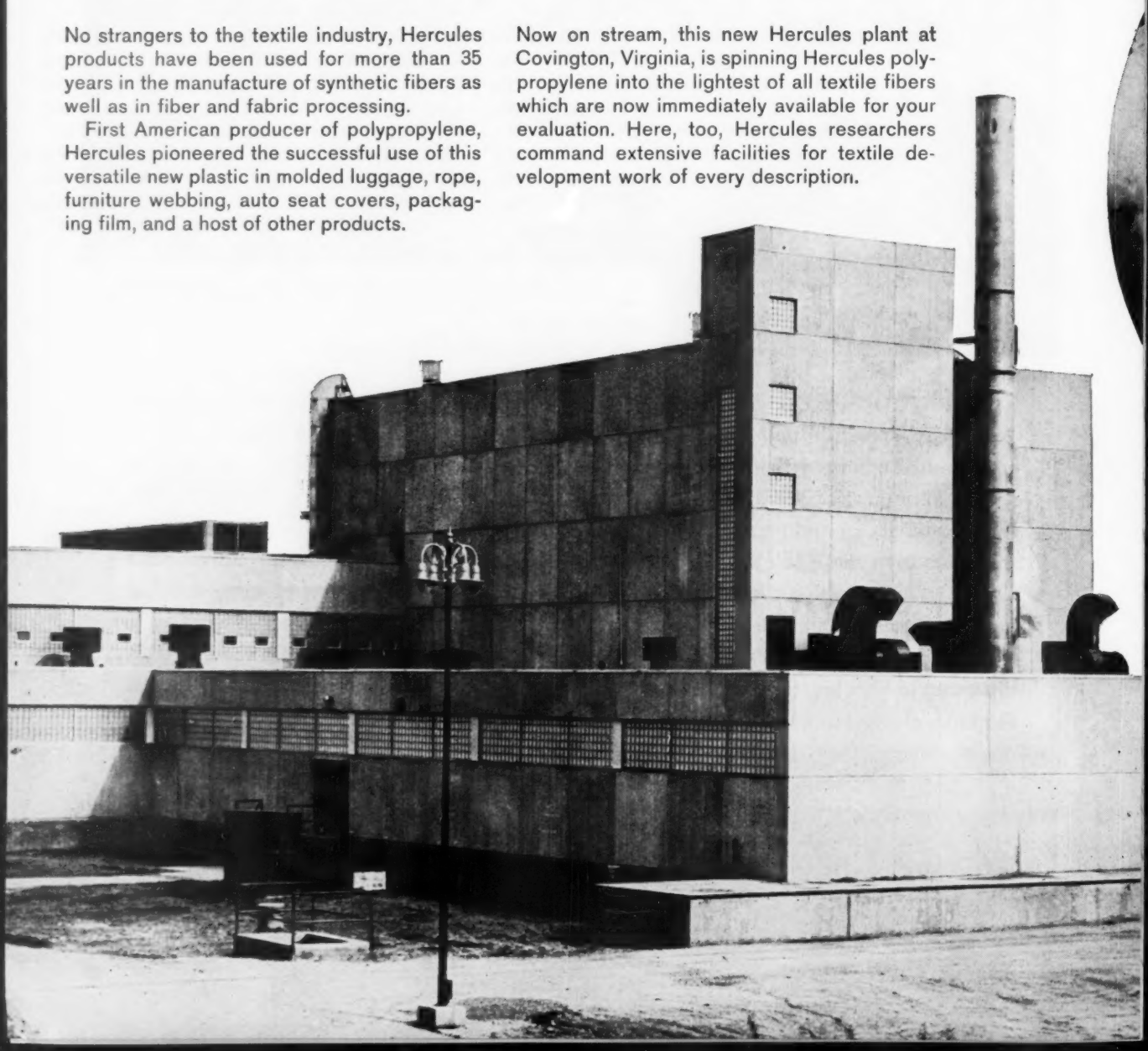
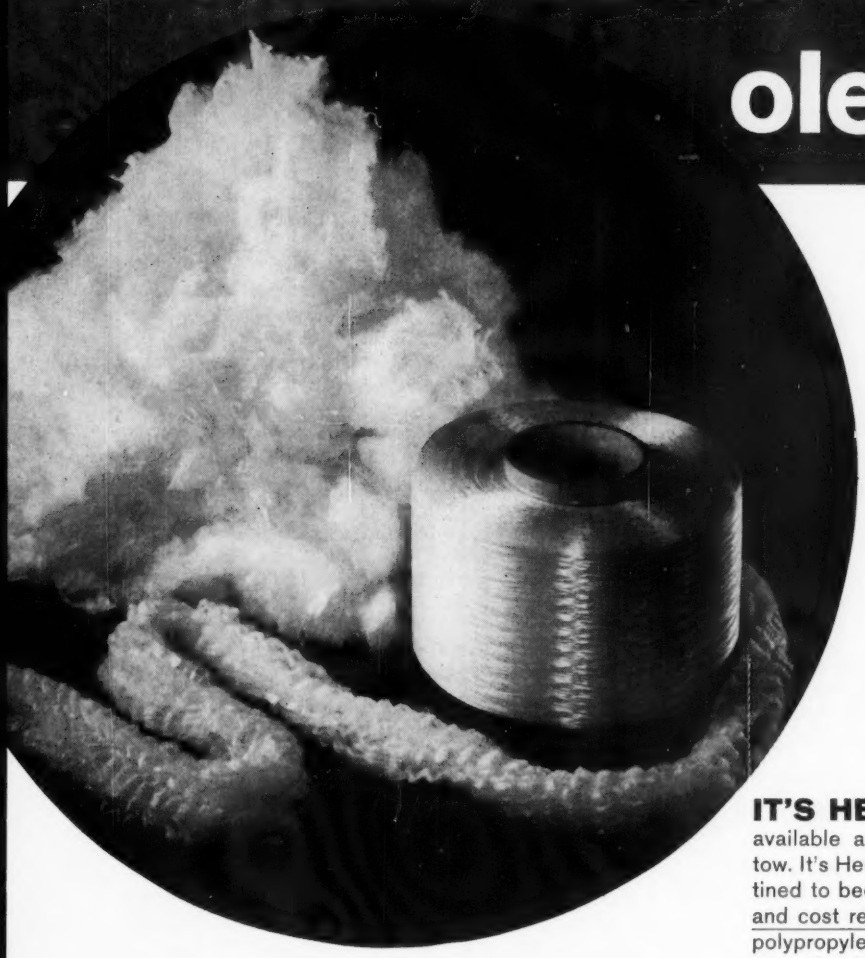


POLYPROPYLENE

olefin fiber



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This simple test will help you

Avoid creel draft variation

By Norbert Lloyd Enrick*

THE CREEL on almost any textile machine can be the hidden cause of some serious quality problems. One mill, for example, plagued by a condition of "mixed filling" in certain fabrics, discovered slack roving and an associated variable break draft in spinning to be responsible for the condition. A check revealed that the back top rolls were weighted inadequately and inconsistently, thus giving rise to slack roving feed from the creel and yarns running on the heavy side. Further inspection showed that many of the unduly heavy yarns were also being ring-burned.

Simple Test

A simple test, outlined in Exhibit 1, requiring no expensive equipment and only a few minutes of checking per frame, will help the mill avoid both unduly stretched or too slack rovings in the spinning creel.

Exhibit 1
SPINNING CREEL DRAFT VARIATION CHECK

Purpose:
Minimizing of creel draft variation will prevent excessively stretched or unduly slack roving in the spinning creel, thus enhancing yarn uniformity and fabric appearance quality.

Equipment:
Soft, dark colored chalk; recording pad.

Sampling:
Test all spindles on five percent of the spinning frames per week.

Method:
1. Walk down the running frame, marking each roving end as close as possible to the bobbin, and using a creel bar for sighting, so that all marks will be as level as possible at the start.
2. When a fourth or a third of the frame has been marked, the line of marks will, at the first spindle, be approaching the trumpet. The line should now be checked, and any advanced or lagging marks be noted. A faster than average feed, evidenced by an advanced mark, means slack roving. A slow feed means excessive stretch.
3. Cover the entire frame side. Then recheck all leading and lagging ends found from Step 2. Inspect carefully all creel positions on stretched roving and all rolls and trumpets on slack roving.
4. Report all deliveries found to have stretched or slack roving, together with any off-standard creel or roll conditions noted.

Evaluation:
On a particular frame, the uniformity of spinning creel draft is evaluated in terms of the percentage of stretched or slack roving:

$$\text{Stretched, } \% = (100 \times \text{Slow Ends}) / \text{Total Spindles on Frame}$$

$$\text{Slack, } \% = (100 \times \text{Fast Ends}) / \text{Total Spindles on Frame}$$

Stretched roving will produce light yarn, while slack roving will produce heavy and, if serious enough, ring-burned yarn.

A further advantage of the test is that it can be performed while equipment is in production, and moreover no stock is lost by the sampling and testing. Both, deliveries with excessive stretch and with undue lag, may be found on one frame. The result is excessive creel draft variation.

Causes of Variation

The principal types of causes of excessive variation in roving feed at the spinning frame are listed below:

1. Lint accumulation, wear, improper braking or damaged parts of bobbin holders in the creel. Modern creels may, in some instances, give more trouble than the older skewer arrangements.
2. Back top rolls improperly weighted, covered, or out-of-round.
3. Faulty roll-settings or back-zone drafts.
4. Dirty, clogged, narrow or mis-shaped trumpets.
5. Misalignments from supply bobbin through roving bars, trumpets and drafting zone.

Even where these factors do not cause immediate and noticeable quality problems, they nevertheless contribute to increased size variations, higher ends-down rates, and weaker yarn.

Detection and correction of faulty creel conditions will, therefore, pay off not only in improved quality and enhanced fabric appearance, but also lowered costs from the higher spindle assignments made possible by a really good rate of ends-down occurrences.

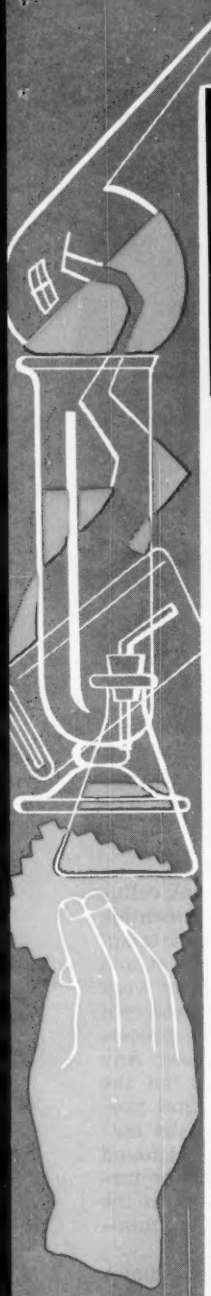
Roving and Spinning Creels

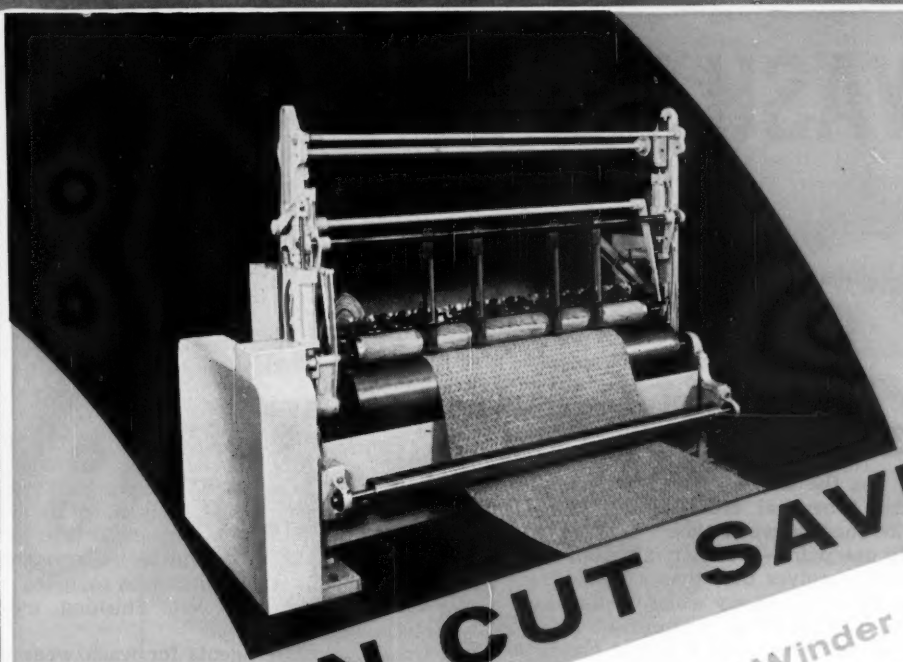
The principles of creel checking, as shown in Exhibit 1, can be applied also to roving and drawing frames. Here again, adjacent strands entering the drafting zone are chalk-marked, and "leaders" or "stragglers" are noted and identified for further check and correction.

(Continued on page 61)

* University of Virginia, Graduate School of Business Administration, Charlottesville.

DYEING and FINISHING SECTION





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A Millman's Guide to

WASH-WEAR FINISHES

Are you confused by the variety of wash-wear finishes? Do you have trouble keeping brand names and claims sorted in your mind? Here to help you is a broad review of these finishes and the chemicals that make them work—along with brand name definitions

by Sanford P. Young,
YOUNG CHEMICALS, ASSOCIATED

WE HEAR AND USE the words "resins" or "non-resinous", and also "chemical cross-linking agents." What is the difference between them? At the outset, let us clarify one point—a rather important one. Let us not delude ourselves that these are accurate labels. What are we trying to say when we use these terms to compare different fabrics or finishes? Are we trying to say that one finish has a better hand; or higher wet crease angle, or more chlorine resistance, or better permanence? Or are we describing a more sophisticated method of cotton processing in which the cotton fibers are in a swollen state during a particular part of the process?

Perhaps we are trying to say all of these things in some cases, and just some of them in others. The important thing is to know that these words mean different things to different people at different times. Thus I would urge textile people to use them with caution and to listen carefully when they are used. Your focus has been and should continue to be: does this finish have the properties I need in my application?

The first attempts to improve cotton fabric's recovery from wrinkling by chemical finishing date back to the 1920s. During these initial attempts, undesirable side effects of the treatment prevented its commercial utilization. Further work on the process succeeded in improving the products, but progress was slow. It is hard to realize that in 1948, less than 1% of the cotton fabric production was C.R.F. or wash/wear. Increased research and development efforts during the past decade, aimed at the development of wash/wear cottons has been intensified. In 1955, the first year in which production reached a significant volume, 600 million linear yards of cotton fabric were treated for wrinkle resistance. By 1959, there were 1.9 billion yards of wash/wear cotton produced, and today, over 50% of all the cotton and rayon textiles produced in the United States are currently receiving various chemical treatments for dimensional stability, crease resistance, spot and stain resistance, water repellency, and bacteriostatic effects. The National Cotton Council of America tells us that there is still a potential market of over 5 billion yards of fabric yet not treated for wash/wear and easy care properties.

Continued increase in acceptance of wrinkle resistant cottons depends largely on continued improvement in the quality in the goods. This in turn depends on more and more complete understanding of the physical and chemical processes involved and on the development of improved finishing methods and materials.

Crease proofing agents for wash/wear finishing is a many faceted subject and I believe it will be most convenient to start out by listing a number of the representative resins and reactants along with a short account of their major properties.

Formaldehyde

This was the first material used to cross-link cellulose. For many years people have been experimenting with formaldehyde and other aldehydes in an attempt to produce a cotton cellulose that has both wet and dry wrinkle resistance, without a number of very negative side effects. Probably the greatest deterrent to the use of formaldehyde in the dry cure process has been its volatility and high strength loss. Any aldehyde can form a cross-linking reaction but the effect of the treatment is very similar to that produced with formaldehyde. Probably one of the biggest reasons that aldehydes generally have not found a large commercial acceptance is because of the terribly stringent control that is necessary to effect the cross-linking reaction without anything but a minimal number of side effects.

There is presently on the market today, a finish that is based on formaldehyde. The commercial results thus far appear to indicate that it is highly successful. This, I would imagine, stems from the type of buffered catalyst that is employed in the process.

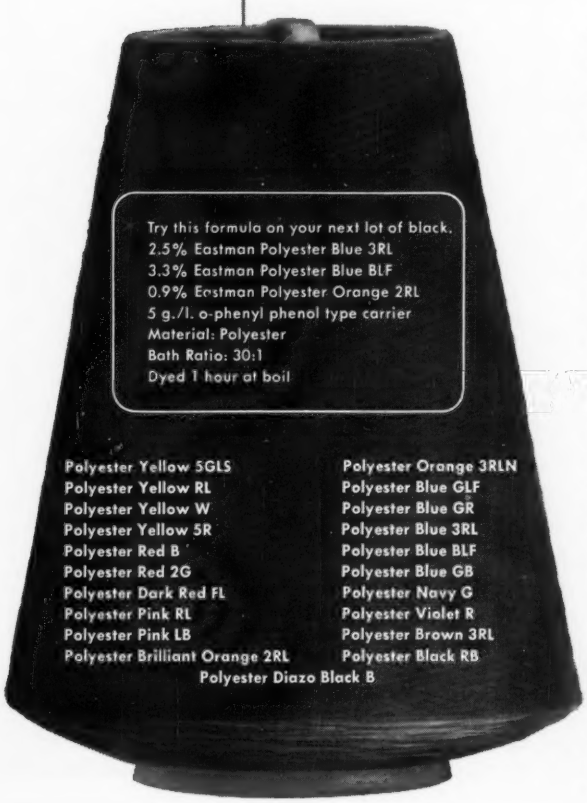
Urea Formaldehyde

Urea formaldehyde was the first commercially important product for imparting wrinkle resistance to cellulosic fabrics. This group includes a range of products varying in formaldehyde content, Methylol content, and degree of condensation. The simplest member of this U. F. group is monomethylol urea. This was perhaps the first resin precondensate used commercially for improving cotton's wrinkle resis-

(Continued on page 32)

Send your DARK SHADES to market protected by the OUTSTANDING FASTNESS of

EASTMAN POLYESTER DYES



Call in your Eastman representative to tell you all about the performance advantages and economy of these dyes

Darker shades of polyester fabrics and their blends are more in demand than ever.

In step with this trend, Eastman offers an expanding series of polyester dyes, providing the best all 'round fastness characteristics of polyester dyes currently available.

Specifically developed for use with polyester fibers, these dyes exhibit outstanding fastness to washing, light, sublimation, crocking, perspiration, dry cleaning and wet pressing.

Equally important are their excellent processing characteristics... good build-up, good exhaustion and outstanding leveling properties. Thus, blacks, charcoals, navies and browns are economically obtained.

Dyeing with Eastman Polyester Dyes is easily accomplished with carriers or under pressure at elevated temperatures. Fibers can be readily dyed in tow, tops, stock, or fabric forms. Fabrics of polyester filament can be conveniently dyed in jigs. Fabrics woven of spun polyester yarns alone or blended with cotton, viscose or wool can be easily dyed in dye-becks.

Get the full story of this outstanding line of dyes for polyester fabrics from your Eastman representative.

Eastman Polyester Dyes

Eastman Polyester Dyes are sold in the United States by EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of EASTMAN KODAK COMPANY, in Kingsport, Tennessee; Lodi, New Jersey; and Greensboro, North Carolina. On the West Coast through WILSON & GEO. MEYER & COMPANY, San Francisco, Los Angeles, Portland, Seattle, Salt Lake City. In Canada through CLOUGH DYESTUFF CO., LTD., St. Laurent, P. Q.

A Millman's Guide to wash-wear finishes

(Continued from page 30)

tance. Such a product is comparatively ineffectual as a crease-proofing material if used with acid catalysis, but is surprisingly effective under alkaline catalysis. The second U. F. resin to be produced and used commercially was dimethylol urea. This material performs best under acid catalysis and yields a high degree of crease recovery that is quite good. It is felt that some polymerization occurs both inside and on the surface of the fibers treated. It has been shown readily with cotton cellulose. The public has for years associated wrinkle resistance with a crisp, full hand, and in some cases, applications of this type are desirable. However, if the degree of surface resin formation is not closely controlled, a hand, too boardy and firm, frequently results.

Indications are very firm that the durability of the crease-proofing and wash/wear effects will vary from fair to good depending upon the formaldehyde content of the resin. As a class, the urea resins lack chlorine resistance, and this more or less limits their use on colored fabrics. The tendency of such a resin finish to detain chlorine also means that strength damage to the fabric will doubtlessly result.

U. F. resins by and large are rather easily hydrolized, and the durability of the finish is badly impaired. Another contingent liability risked when using U. F. resins on cotton is, of course, the presence of formaldehyde odor in the fabric.

Melamine Formaldehyde Resins

The efficiency of these type resins on a weight basis is perhaps not as great as that of cyclic ureas, but they do produce comparable wrinkle recoveries at lower strength losses. Washfastness of melamine resins is very good. Chlorine pickup ranges from very high to moderately low depending upon the chemical structure of the resin. Certain melamine resins do exhibit a tendency to yellow on chlorine wash more than other type melamines. However, by using metal salts to catalyze the polymerization reaction, coupled with rather high curing temperatures, this tendency can be improved.

In recent years a very effective resin finish that tends to remedy some of the inherent liabilities of melamine formaldehyde resins has been the use of a mixture of melamine resin plus ethylene urea resin.

Cyclic Ureas

This group contains a large number of resins in this general family. One of the most important members of the group, and by far the most important during the 1950s, was dimethylol ethylene urea (DMEU). Fabrics treated with DMEU give a soft hand due to the absence of insoluble surface resins, and accordingly, because of this minimum amount of surface resin, one of the earliest uses was in embossing.

It is felt by some that DMEU does not form an insoluble resin, but actually is a cellulose reactant. This is in contrast to the earlier U. F. and melamine formaldehyde type resins, which were known as thermosetting resins. Fabrics treated with DMEU can give high wrinkle resistance levels at low additions without excessive strength losses.

Dimethylol ethylene urea resins are superior in their chlorine resistance as compared to the previous type resins discussed. Therefore, chlorine damage is low even after severe chlorine washing. Also, a definite plus for this resin is that the fabric does not yellow on chlorination.

Unfortunately, DMEU finishes are susceptible to acid hydrolysis and after repeated alkaline washes or laundry sours the finish is loosened up and the chlorine damage increases sharply. This I am sure is the reason that DMEU has not been used more widely on white fabrics that will be commercially laundered.

Triazones

This is another of the cyclic urea resin family and chemically must be considered a more complicated variety. The Triazone compounds have been known for a number of years but did not come into commercial use until early 1950. Shortly after the commercial introduction of the Triazone and modified Triazone resins, came the introduction of a multifunctional, Triazone formaldehyde based cross-linking agent. This product, that has now been in commercial application for about 6 or 7 years, has received wide acceptance in the textile industry. It is felt by a number of people to have a broader spectrum of outstanding properties than those perhaps furnished with other types of commercially available resins. Fabrics treated with pure Triazone resins show no damage due to retained chlorine. When Triazone resins are mixed with resins normally exhibiting high damage due to retained chlorine, they exert a chlorine damage depressant effect. Triazone resin finishes compare favorably with the best nitrogenous resin finishes in respect to durability and crease resistance-fabric strength relationships.

Their main drawbacks are conceded to be low efficiency, discoloration at high temperatures used in commercial curing, and susceptibility to odor formation. Although the Triazone resins have been blamed for imparting odor to the fabrics, this has not been a problem in commercial useage where properly prepared resins and proper treating conditions have been employed. In finishing plants where the technology of handling resin treatment of cellulose is more sophisticated, the problem of discoloration after curing as well as the imparting of odor have now been reduced to a minimum.

Triazones, like DMEU, do form cross-linking resins. However, they are less susceptible to chlorine damage and acid hydrolysis, undoubtedly because of their difference in chemical structure.

There are now on the market a number of Triazone resins and their exact properties naturally vary with their composition. These resin reactants have been in commercial application on a very large scale for a number of years, and have been found to be a most valuable addition to the finishers' line of crease-proofing materials.

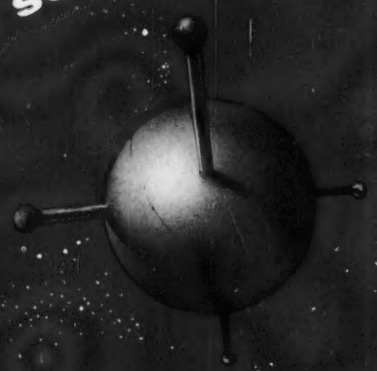
Chlorine Retention

It might be wise to interject at this point perhaps an oversimplified description of chlorine retention:

The resin treated cotton fabric acquires an ability to pick up chlorine from a hypo-chlorite bleach bath and form chloroamides. The chloroamides are unstable chemical compounds which may decompose

(Continued on page 57)

NEW SOFTENERS FOR THE NEW AGE IN TEXTILES



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SOFTYNE SPECIAL

A nonionic softener giving a smooth, full hand and having high scorch-resistance. Imparts excellent lubricating, anti-static and sewability characteristics. Applicable to all natural and synthetic fibers. Applied in short bath to yarns, threads, piece goods and knitted goods.

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A polythylene wax emulsion recommended as a lubricant and softener for all textile fibers.

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Dyeing Plant Modernization

CURING OVEN sparks output

A NEW CURING OVEN recently installed at Jersey Dyeing Co., Paterson, N. J., has not only enabled the company to produce better quality goods but has opened up entirely new fields for this commission dyer.

Established in 1936, Jersey Dyeing has specialized mainly in lingerie, blouse and dress fabrics consisting of acetate, nylon, Du Pont Dacron polyester fiber and some of the other newer manmade fibers. About two years ago the company starter roller printing and soon discovered that tentering was not giving them all of the desired results.

A roll curing oven was purchased from the National Drying Machinery Co. and this unit has been found to develop the colors to a far greater degree with better color value all around than obtainable in the past. Curing by this means stabilizes both the fabric and the colors, making the goods fast to washing.

Because of limited floor space in the immediate area where the curer was to be installed, National designed the machine with feed, delivery, and necessary controls, all at the same end. Besides saving floor space, this arrangement is more convenient and economical for operation. A girder-type bridge extends out from the top of the machine; delivery of finished fabric comes down from this bridge onto existing take-up equipment. The superstructure extends out over the feeding area and the take-up is directly behind the feed. This system also permits the fabric to cool after curing. Jersey Dyeing finds this much better than rolling up the fabric while it is still hot.

The curer has a holding capacity of 93 yards and curing generally takes about 3 minutes. On quality fabrics, Jersey Dyeing runs the machine between 30 and 40 yards per minute; but it is possible on some types of finishing to operate the curer up to 150 yards per minute. Proper diameter and spacing of the conveying rolls provides maximum holding capacity with optimum circulation. Hot air moves from the plenum chamber above the top rolls, through nozzles between rolls, and from top to bottom over the full width of the fabric. Adjustable nozzles allow perfect balancing of air distribution throughout the oven.

The new machine is equipped with an adjustable-

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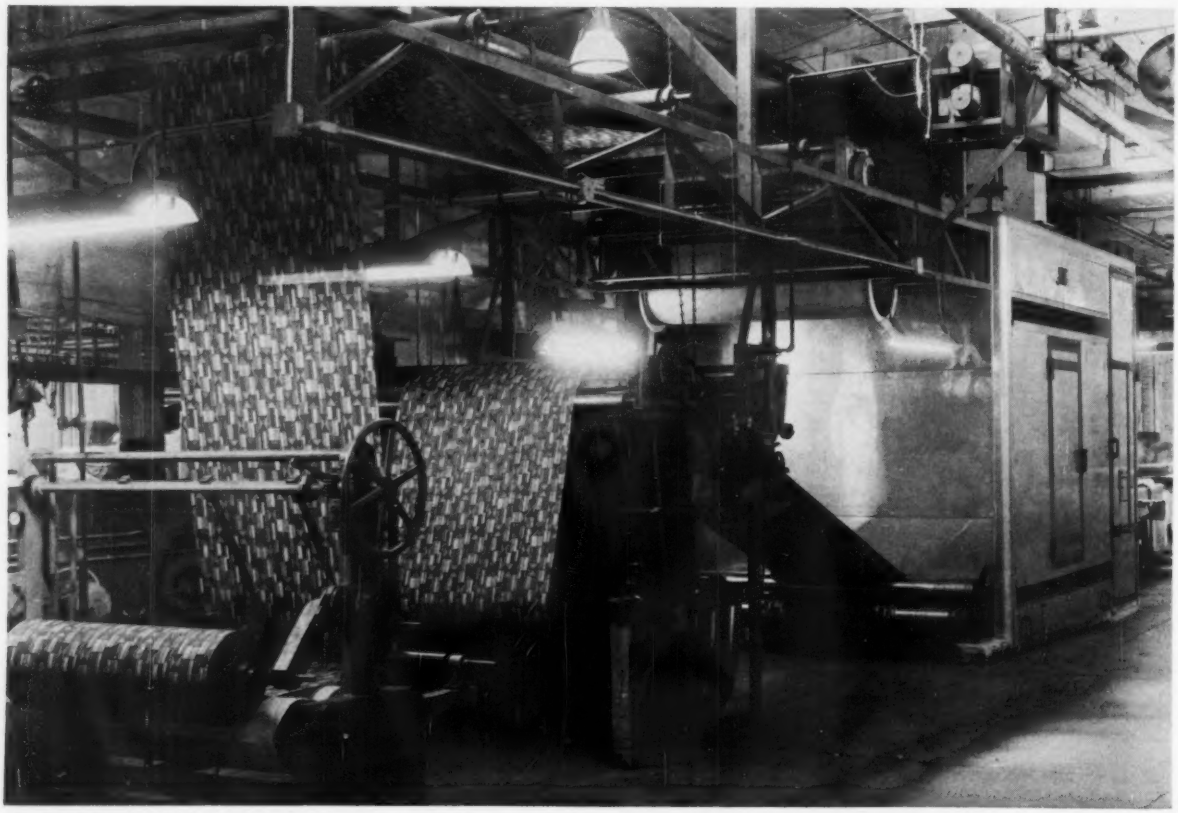


UNIQUE FEATURE of curing oven is girder-type bridge extending from top of machine so that delivery of finished fabric is directly behind feed. This saves floor space, permits fabric to cool

Franklin Colorbred Yarns

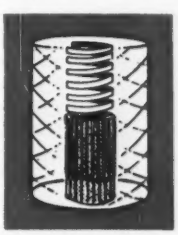
Trade Mark

Just as Franklin Colorbred Yarns prove their quality by delivering properly at the knitting machine, or in warping or winding, and by standing up to the finishing operation, so do they prove their quality to the retail buyer in many ways:—shades in step with fashion trends, uniform dyeing and even superior "hand" in some cases.

If you would like to know more about shades that are in step with fashion trends, ask us for our latest seasonal color card.

In case you don't know why Franklin Colorbred Yarns are uniform in shade, it's because of the Franklin Compressible Spring Package. Soft packages compress more and hard packages less into a column of uniform density. Uniform penetration of dye liquor and uniform shades consistently follow.

If you would like to know more about superior "hand", ask us for the story on FLUFDYED Hi-Bulk Orlon (Dupont's acrylic fiber).



X-ray view of Franklin Package—the "secret" of uniform shades. Don't say "package dyed". Say . . . "FRANKLIN COLORBRED"

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Franklin Process

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Largest Package Dyers in the World of Natural and Synthetic Fiber Spun Yarns for More than Half a Century

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Cyanamid Tells How to Finish Creslan Knits

TECHNICAL DETAILS on finishing fabrics knitted from yarns of Creslan acrylic fiber have been compiled by the fibers division of American Cyanamid Co. following mill evaluation. Discussing finishing procedures contained in a new bulletin, Bertram Sternlieb technical service representative, said that yarn-dyed and piece-dyed Creslan tubular knit cloths may be finished without special machinery or chemicals. For wetting out procedures, he suggested using a dye box large enough to accommodate the number of fabric pieces to be finished, remembering that "abnormal deviations in goods-to-liquor ratio will alter the effectiveness of the finishing."

Scouring of Creslan acrylic knits is done at 130 degrees F. using a nonionic detergent, 1-2% o.w.f. for 20 minutes. Sternlieb noted that the percentage of detergent will depend on the yarn spinning route and as well as fabric construction. Rinsing is done while goods are in motion by overflowing with the bath temperature at 90-110 degrees F., he said, suggesting a pH of 6 to 6.5

Softeners may be added after rinse water has been removed and replaced with fresh water. Sternlieb suggested a compatible cationic softener (0.5% to 2% o.w.f.) for use of Creslan tubular knits. Following application of the softener, the machine is run for 15-20 minutes and the fabrics are removed before emptying the bath. Extracting may be done through the use of a centrifugal extractor or by using rubber-covered rollers if fabric texture permits.

Mill trials have shown that, in order to prevent wrinkling, damp goods should be dried as soon as practicable. Overnight storage before drying should be avoided. If a drum dryer such as Tube-Tex Reelax-Jet is used, adjustments can be made in the drum speed, the temperature and the speed of the overfeed mechanism. In single-machine or tandem use, the temperature should be set to 180 degrees F. A drying speed of five yards per minute with 10% overfeed is recommended. Heavier tighter fabrics require less overfeed and longer drying cycles. If a loop-type dryer is used, care should be taken to allow the fabric to enter the machine with as little tension or drag as possible. Flat folded fabrics are recommended for proper feeding of the loop dryer.

Sternlieb reported that excellent results have been obtained with a Tube-Tex Tensionless calender. "Tubular knitted fabrics made from Creslan acrylic fiber require very little steam to bring them out to normal width and to remove wrinkles."

New Acid-Dyeable Orlon Offers Economical Color Styling

Commercial availability of a new form of Orlon acrylic fiber, offering the knitting industry economical color styling through cross-dyeing in piece goods, has been announced by the Du Pont Co. Using the new Orlon Type 44 acrylic fiber in combination with Orlon Type 42 acrylic fiber, multi-color styling effects are possible using single bath piece-dyeing techniques. The new fiber is acid-dyeable and was engineered to complement conventional basic-dyeable Orlon Type 42 acrylic fiber.

Du Pont recommends the industry try the five-yarn system in basic styling ideas. It employs 100 per cent Type 42, 100 per cent Type 44, and blends of the two types in the following proportions: 90 per cent Type 42 with 10 per cent Type 44; 67 per cent Type 42 with 33 per cent Type 44; and 50 per cent of each type. This affords optimum balance of versatile styling potential and number of yarns needed.

With each yarn accepting a different amount of dyestuff, five variations of two colors may be obtained in a single bath to produce stripes, bars, heathers, argyles, and other fancy patterns.

These various blends of types of Orlon can be cross-dyed with no staining of either fiber during dyeing. Colors are fast to 140°F. washing and show at least 40 hours fastness in the Fade-Ometer. Fastness is also said to be outstanding in dry cleaning, hot-moist pressing, and under crocking and high perspiration conditions. Initial whiteness of Orlon Type 44 acrylic fiber results in clear, bright shades in cross-color effects and there is excellent color stability to heat and use exposure. The good initial whiteness of both Orlon Type 42 and Orlon Type 44 means that bright pastel shades can be dyed on either or both fabrics.

Blends of the two types of acrylic fibers are expected to gain rapid acceptance in knitwear, particularly in sweaters, socks, and jersey fabrics. Use of these blends in woven fabrics also is expected as development work progresses.

In knitwear, fancy coloring patterns produced by piece dyeing will make it possible for sweater, sock, and jersey fabric manufacturers to carry out special color promotions in various geographic areas with little or no delivery delays and allow them to fill specific color orders quickly.

In woven fabrics, cross-dyeing of Orlon Type 44 and Type 42 acrylic fiber combinations will make possible a broad variety of styled fabrics in lightweight coats, sport shirts, suit, and dress fabrics.

'Scene Changers' Promotion

Fifty-six retailers throughout the country already have affirmed their interest in participating in Celanese Fibers Co.'s "Scene Changers" promotion of ready-made home furnishings, scheduled to kick off this fall. The early volume of approvals is attributed to the success experienced last fall by many of the same retailers with the Celanese promotion of decorative fabrics, "New Rooms for Old."

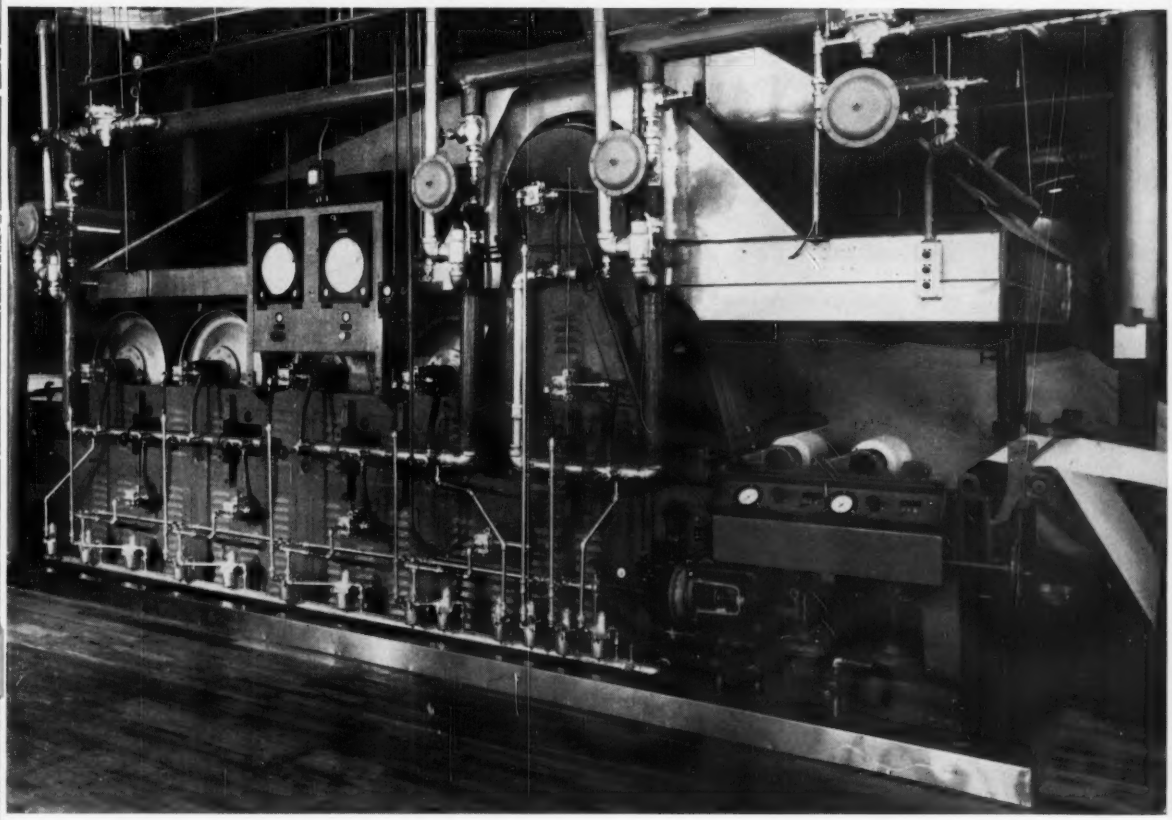
Celanese is concentrating its fall merchandising plan in this promotion on the field of ready-made curtains, cafe curtains, draperies, shower curtains and bedspreads. Celanese retained Dorothy Draper, of Dorothy Draper Enterprises, Inc., to design a series of 20 room settings featuring ready-mades, which are now being previewed by the trade.

Taslan Sewing Thread

Coats & Clark has introduced a nylon home-sewing thread, made of Taslan textured nylon, for use with manmade fiber fabrics. Texturing is said to give the new thread a soft surface, a quality which adds ease of sewing to nylon's strength, stability and abrasion resistance. The thread's properties make it compatible in performance and wash-and-wear qualities with fabrics of nylon, Dacron polyester fiber, Orlon acrylic fiber, and with blends containing a high percentage of these fibers. *For further information write the editors.*

MACHINERY and EQUIPMENT SECTION

ANOTHER RECENT COCKER GH SLASHER INSTALLATION



Rugged and compact construction is one of the reasons for the outstanding performance of the Cocker GH Slasher. Only Cocker offers full-length frames of compact, accessible, and space-saving design. Cocker-designed bracing between bottom and top cylinders eliminates sway or rock under heavy loads and at speeds up to 184 ypm. No Cocker machine has ever needed additional bracing after installation.

Extra convenience is another valuable advantage. Any cylinder can be removed individually. Snap-out venting panels and light metal sprocket guards can easily be removed by one man. Low silhouette permits watching the warp on standard top cans without using a platform.

Now and for years to come, no other machine will be more capable of heavy, high-speed production loads for all types of fibers — truly "TOMORROW'S SLASHING TODAY". Write for illustrated catalog.

A Few of the Other Superior Cocker Features are...

- **Direct Torque Tube Beam Drive* which prevents stretching and eliminates troublesome belts, chains, sprockets, etc.**
- **Reinforced calender roll assembly timing belt drive**
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Predictable results are in reach with

CONTROLLED FIBER CRIMPING

Now possible with new machines, controlled crimping yields better, more varied yarns

CRIMPING SYNTHETIC FIBERS with a predictable result is coming closer to a reality every day, according to a study recently completed by the Engineering Department of Turbo Machine., Lansdale, Pa. According to the survey, fiber producers, fabric producers, and spinners expressed awareness and appreciation of the advances made in the last 12 months in achieving a crimp that can later be duplicated.

Crimping is being used by fiber producers for two apparently contradictory reasons, the Turbo report noted. A fiber, such as 3-denier nylon, develops excessive inter-fiber friction when not crimped. Orlon sliver needs crimp for cohesion. Crimping nylon prevents packing of fibers, and facilitates the drafting operation. Crimping Du Pont Orlon acrylic fiber defines the sliver and prevents it from falling apart when taken from the can for processing.

In addition to improving fiber processing, crimping is widely used to achieve desired effects in finished fabrics. For high luster, the crimping level is kept as low as possible. A so-called lean, or hungry fabric, is the result. The low crimp prevents undue diffusion of light. Applications are principally in woven goods, such as drapery and upholstery fabrics. Low crimp is used in industrial textiles for another reason. In filter fabrics, sewing thread, rope, and seine twine, the crimping level is kept at a minimum to assure greater strength in the individual fibers.

A high degree of crimp is used for bulkier fabrics, designed to give cover without weight. One good example is the conversion of filaments to high crimped carpet yarns. Much greater coverage is obtained. Sweaters are another example. In sweaters, the economics is all in favor of crimped yarn. A high-bulk sweater may use 5 ounces of yarn, compared with 8 to 9 if made from uncrimped yarn. But, the important difference is in the loft and hand of the high-bulk sweater. In some textile processes, crimping is actually a doffing mechanism, used as a draw-off to give the fiber definition rather than to achieve loft. Substantial losses have been suffered by some manufacturers because of unsatisfactory crimping results. In one instance, an upholstery manufacturer rejected 7,000 lbs. of Orlon yarn due to excessive crimp, which made it impossible to achieve the high luster desired in the finished fabric.

Several methods of obtaining a crimp have been tried, such as running the fibers over a sharp object under heat, blowing the fibers in a jet stream of air, and driving the fibers at great speeds over a fixed object. But the survey indicated that much more predictable results are obtained through the stuffing box technique. In this connection, one manufacturer said that the introduction of air cylinders to control pressures in the stuffing box has made a great contribution to predictable results in crimping.

Basically, crimping is designed to change the formation of synthetic fibers from straight strands of material to bent or crimped strands. The purpose of crimping is to give to synthetic fibers the irregular

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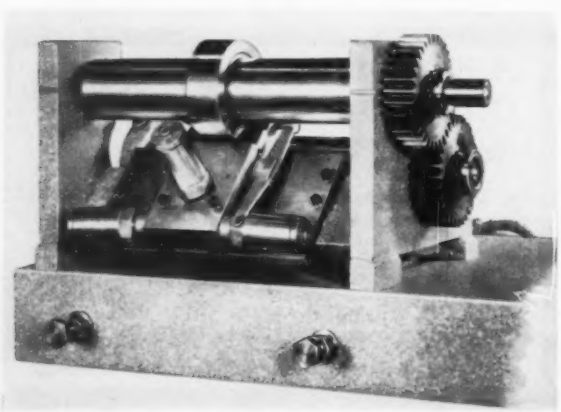
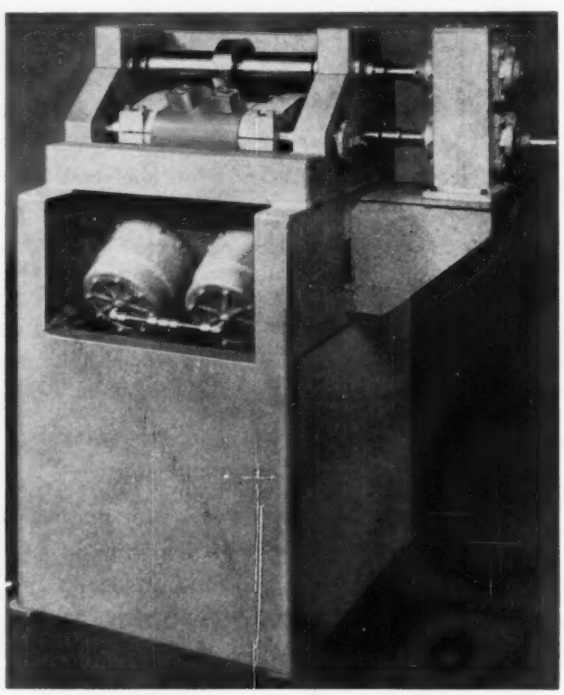


DELIVERY END of Turbo DC Crimper. Adjustable air cylinders control roll pressure and pressures in stuffing box

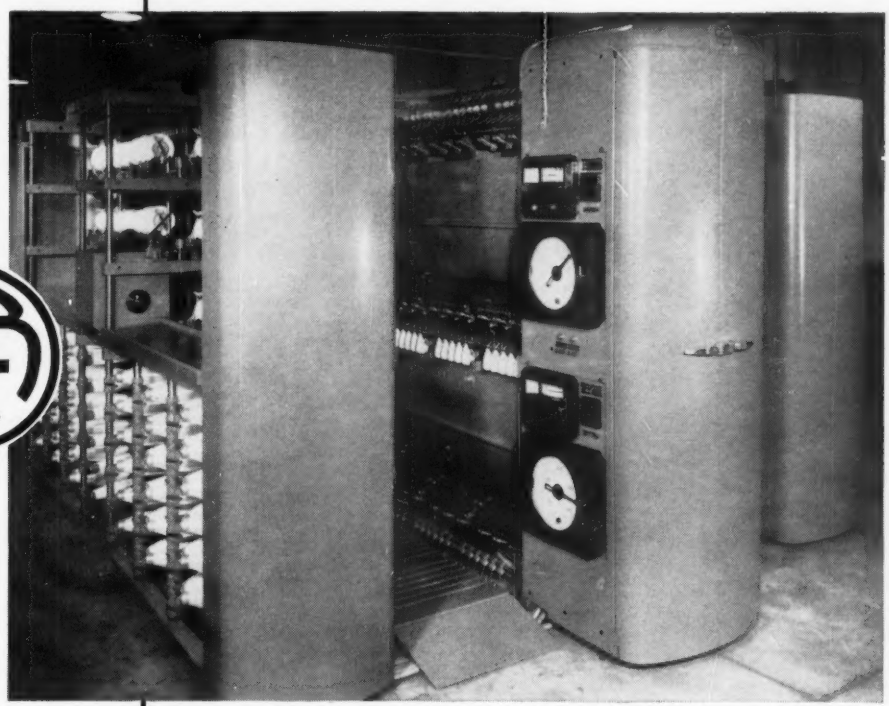


TURBO'S MODEL W TOW CRIMPER is designed for crimping tow and heavy work on sliver

START RIGHT and you'll "FINISH" RIGHT!

with textured yarns processed by Whitin-ARCT.*

Start with the unmatched quality found only in ARCT precision-controlled yarns — and watch your "finishing" troubles vanish — in either knitted or woven textured fabrics.



* Whitin Machine Works is the exclusive licensee of A.R.C.T. in the United States, Mexico and Canada. FT and FTF machines are manufactured by Ateliers Roannais de Constructions Textiles, Roanne, France.

The ARCT Type FT machine, introduced only two years ago by Whitin, has already made a great impact on American throwsters with the quality of its false twist and stretch yarns for knitting — quality unsurpassed for uniformity, elasticity, crimp-retention and level dye affinity.

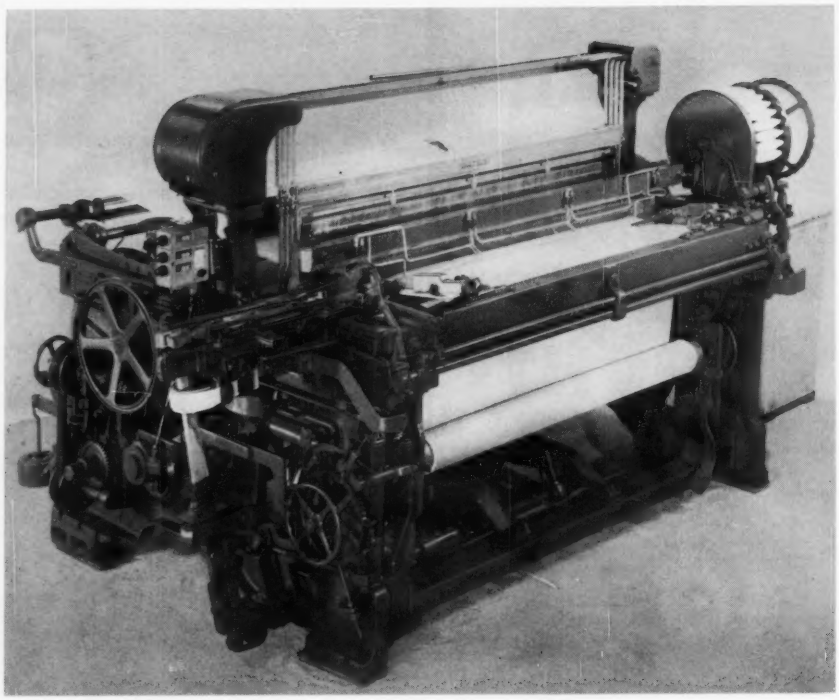
Now, to the exciting and expanding field of woven textured fabrics, Whitin brings a great new companion machine, the ARCT type FTF for the processing of "modified" yarns with the same "golden touch" of quality. Built with the same critical care — the FTF features the same precision in yarn control — the same exactness in mechanical and thermal controls — eliminating the possibility of variables being present during yarn processing — even holding spindle-to-spindle heat variation to a hard-to-believe ± 1°C.

FTF processed yarns, characterized by outstanding dimensional stability and maximum bulking, may be precisely tailored to your product requirement.

WHITIN MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

Draper's new X-3 Model Loom



New loom offers broad weaving versatility

IN AN ERA of constantly changing machinery requirements, Draper Corp. has come up with a promising answer to the increasing need for more mill versatility in the development of the X-3 model loom.

Interchangeable mechanisms such as take ups, let-offs, top motions, etc., assure flexibility for the millman who today is faced more and more with the economic need to introduce something new in the hope of securing a better, more competitive and profitable product. Beset by the growing hazard of fabric obsolescence due to market changes, shifts in end-uses, sudden boosts in production costs and other unpredictable movements, successful mill management must have equipment that will permit the utmost in production flexibility.

Draper has moved a step in this direction with the new X-3 loom. Perceiving the need for greater versatility at the weaving level, Draper began some time ago to study possible modifications in its existing line of looms to see how fabric diversification could be improved. The new model, which is now being delivered to important mill groups, can be manufactured in widths from 40" to 72" and combines new features with a variety of proven successful loom mechanisms to permit weaving both cotton and manmade fiber cloth.

While large yardages of basic cotton fabrics are being woven on the new X-3 model loom, it is perhaps in the area of what it can do with both cotton, manmade fibers and blends, that makes it particularly attractive for future use. Just recently an outstanding mill executive said that the long range future of the textile business will be influenced by developments that are being carried out today in fiber technology. One of the largest textile producing operations in the world recently announced that of its total sales, the manmade fibers represented 55%, cotton 25% and wool 20%. It is generally recognized that mills must be prepared to effectively use these manmade fibers and blends in the years ahead.

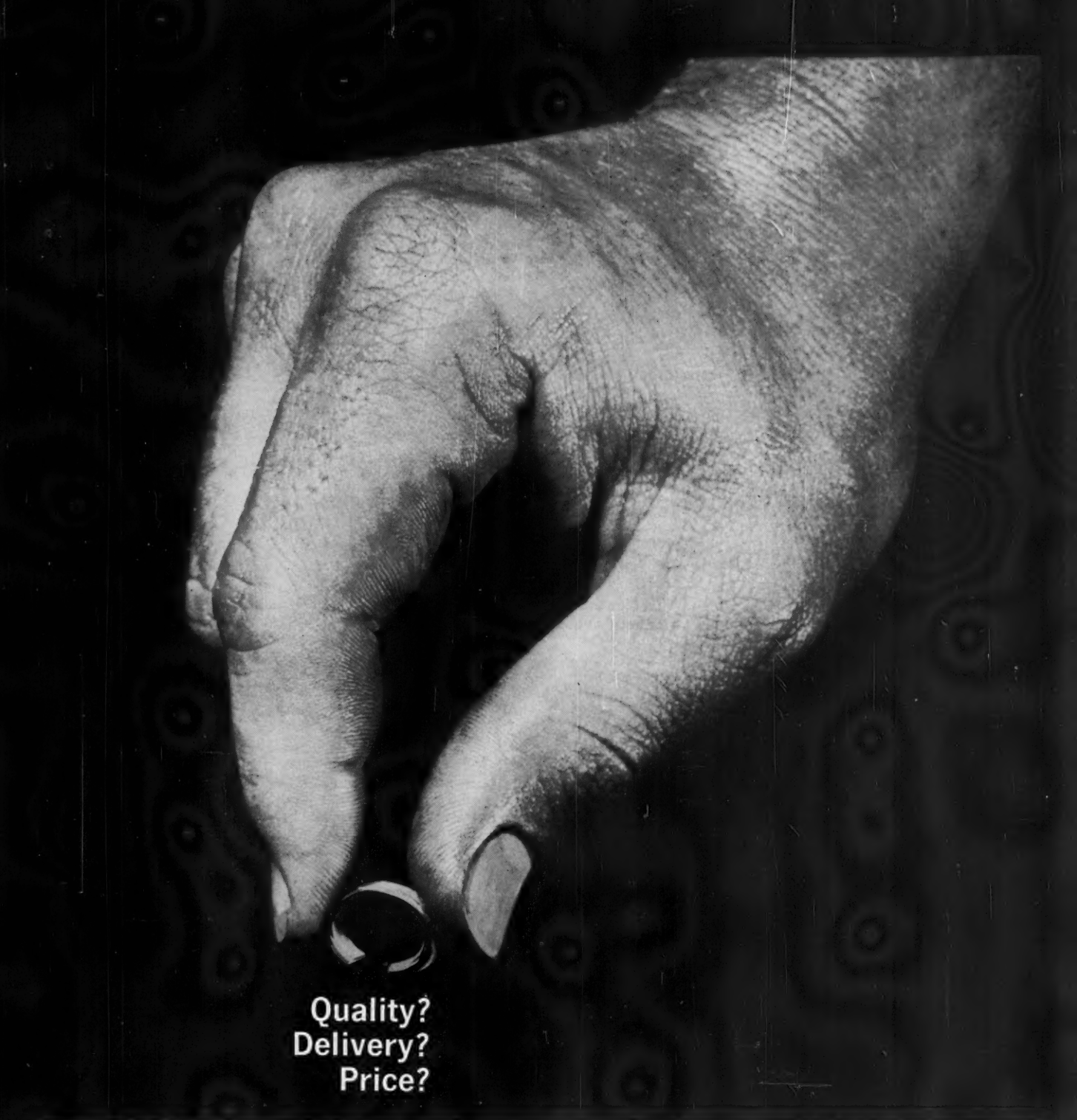
The range of fabrics for which the X-3 model loom was designed includes plain and fancy cottons, sateens, broadcloth, lawns, poplins, corduroys, oxfords, twills, light and medium weight ducks, cords, terry toweling, and batistes, as well as a comparable range of filament and spun manmade fibers.

A substantial weight increase scientifically distributed throughout the frame and shafting permits greater loom stability, reduced vibration and higher operating speeds regardless of fabric being woven. As a result, the X-3 model loom is mechanically capable of operating at maximum speeds for fly-shuttle looms. Mills are currently operating 50" looms at speeds ranging from 197 to 212 picks per minute.

By extending the loomsides at the rear of the loom, the weight of the warp beam is used for added loom stability. This design also gives a simplified, stronger support of the beam bearings. The loom is available with underneath cam construction, two to six harness capacity, combined with an improved type of cloth spring top motion. A device for positive adjustment of harness spring tension is provided. Harness frames are lifted from metal end braces to eliminate bowing.

In addition to the clock spring top, the X-3 loom can be arranged for either 16 harness, 15/32" gauge, or 20 harness, 3/8" gauge dobby or jacquard. Dobby looms can be equipped with a leno attachment for weaving marquisettes. Selective jack sticks, which permit using the same jack stick in all positions, and

(Continued on page 65)



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Utex's new building in Greenville, S. C.

U. S. Textile Machine to make here Barmag's 2-1 Twister

NEGOTIATIONS FOR the joint design, manufacture and sale of the Barmag principle of 2-1 twisting have been completed between U.S. Textile Machine Co., Scranton, Pa., and Barmag, Barmer Machinenfabrik, A. G., Remscheid-Lennep, Germany. In making the announcement, A. W. Thomas, Jr., president of U.S. Textile Machine Co., said both companies will work together in the design and development of machinery for the United States market.

Arrangements were completed with officials of Barmag in Germany by Don W. Scheuer, treasurer of U.S. Textile Machine Co. Werner Schiminski, research engineer from Barmag, with a broad design and engineering background in the 2-1 twisting principle, will spend an indefinite period of time in Scranton adapting the Barmag 2-1 spindle to new equipment designed and built at U.S. Textile Machine's plant for sale in the United States. Cliff W. Palm, chief engineer for U.S. Textile Machine Co. is now in Germany working with the Barmag engineering and research group. Upon his return to Scranton he will facilitate the design and manufacture of this equipment to meet individual mill's requirements.

Barmag, inventors of the 2-1 spindle with worldwide patents, including 12 basic U.S. patents, plus many others pending, has for many years designed and built machinery for its parent companies A.K.U. of Holland and Vereinigte Glanzstoff-Fabriken AG, Wuppertal-Elberfeld, Germany. U.S. Textile Machine Co. has been building textile machinery at Scranton for the past 32 years and is well known throughout the industry particularly in the field of

(Continued on page 55)

Utex management and sales executives: Standing (left to right) Clarence Krapf, W. P. Russell, Pacific Thomas, A. F. Lema, Robert Pinnell, Jerome Gleitz, Al Anderson. Seated (left to right) A. W. Thomas, Jr., Don W. Scheuer, E. L. Jordan.

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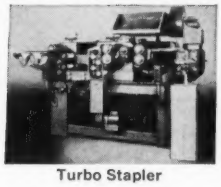
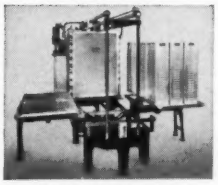


Turbo Stapler

Turbo Dye Boarder

Turbo Padder-Extractor for Tubular Knits



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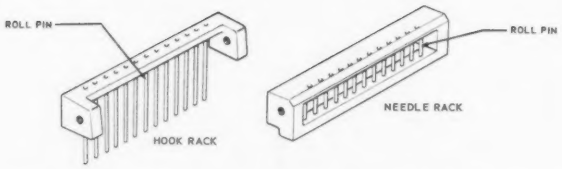


Roll pin dobby hook and needle racks for bottom position

Crompton & Knowles Corp. last month announced that it had sold 472 of its #8 Dobby to a large European textile mill. The #8 Dobby, the company reports, is a strengthened and improved version of earlier models. It is designed to meet today's requirements for higher operating speeds and greater load capacity.

The new type dobby jacks employed on the #8 Dobby (see Figure 1) are much stronger, have longer life and will carry heavier loads with less wear and maintenance cost. An examination of the drawing shows the new design with the jack back held securely between two steel plates which are riveted to the jack. The plate construction prevents lateral motion of the jack back on the hardened steel bushing and insures a "straight" pull on the jack to prevent bending or binding. The bushing and jack back are easily replaced by pressing out the square pin which supports the bushing in the jack plates. Heat treated ductile iron dobby knives also contribute to the improved performance of the new Dobby.

As compared with racks having cast iron teeth, the "roll pin" dobby hook and needle racks for the bottom position, which are included, (see figure 2) are stronger and more precise as pin holes are jig-drilled. If damaged, roll pin teeth can be easily replaced. Crompton & Knowles low maintenance #8 Type Dobby is available with either regular dobby chain or punched pattern indication as shown in the photograph.

FIG. 1

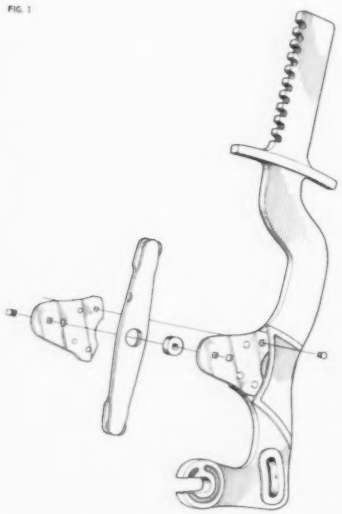
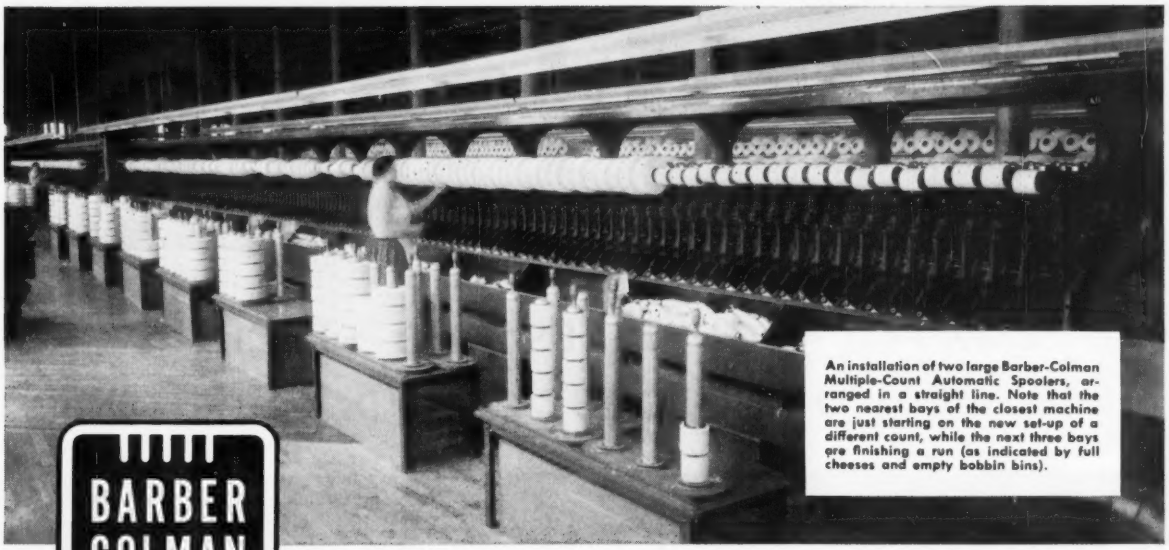


FIGURE 1—New type dobby jacks on Crompton & Knowles' #8 dobby

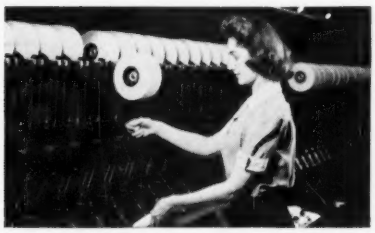
The new C & K Dobby ▶



An installation of two large Barber-Colman Multiple-Count Automatic Spoolers, arranged in a straight line. Note that the two nearest bays of the closest machine are just starting on the new set-up of a different count, while the next three bays are finishing a run (as indicated by full cheeses and empty bobbin bins).

BARBER COLMAN

Multiple-Count Automatic Spooler



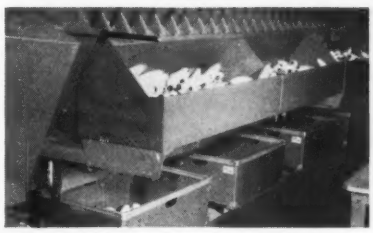
Spooler tender loading a full bobbin into the Spooler. The bobbin is dropped into a "pocket," and the yarn end is slipped into a spring clamp which positions it properly for the knotter to pick up.

Yarn man moving a trident of full cheeses from operator's table to a creel truck. He also returns tridents of starters, removes boxes of empty bobbins, and keeps full-bobbin bins supplied. Boxes under operator's tables are for tailings, and cheeses to be rewound.

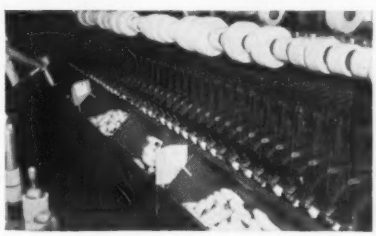
Sale yarn mills and producers of piece goods that use various counts or different mixtures will find that this machine can be a very profitable investment. It is still the famous and the very familiar Barber-Colman Automatic Spooler, but with this difference: now you can wind . . .

A DIFFERENT COUNT EVERY NINE UNITS

The machine is built in "bays" between uprights that support the traveler track, with nine bobbin-to-cheese winding units on each side of each bay. Empty bobbins, instead of being conveyed to a single sorting table, drop into separate boxes under each bay, thus enabling each group of nine units to be used for a different yarn count. Individual operator tables service each bay. The only limitation is that the extremes of different counts on the machine at any one time must fall within the range of the knotter in the traveler. Yarn or count changes can, of course, be readily made at any time, and any number of bays can be run on identical yarns.



A close-up of the full-bobbin supply bins which are fixed to the machine, one bin for each nine winding units. The removable empty-bobbin boxes are shown on the floor below, also arranged so there is one box for each nine units. Note box location guides.



A close-up of several full-bobbin bins showing how dividers can be used to mark off separate runs. Labels tell contents.

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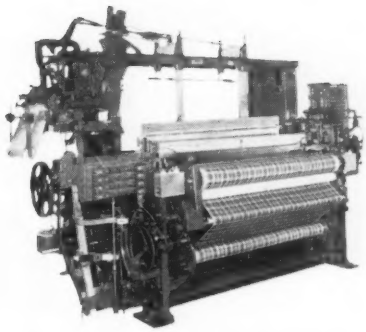

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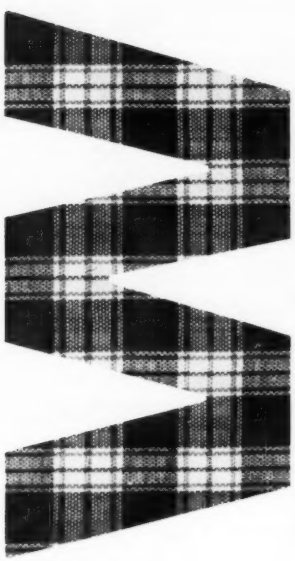

WEAVER ACCEPTANCE of the C-7 Loom is as automatic as the loom itself because less effort is required to operate it and there are fewer duties to perform. Electric controls make many operations automatic and eliminate others, particularly the heavy manual work. Weavers not only say that weaving is easier with the C-7 than with other less automatic looms, but with a minimum of training they can weave quality cloth while operating looms at capacity.

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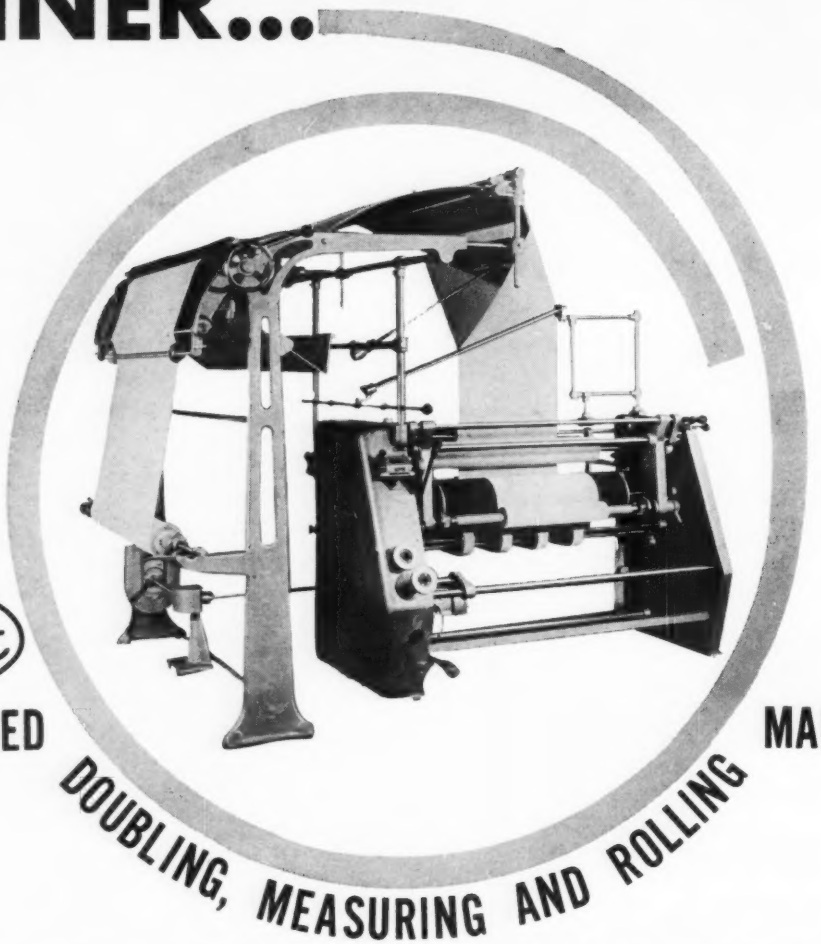

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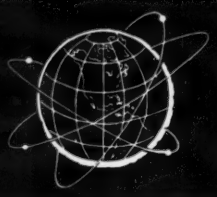

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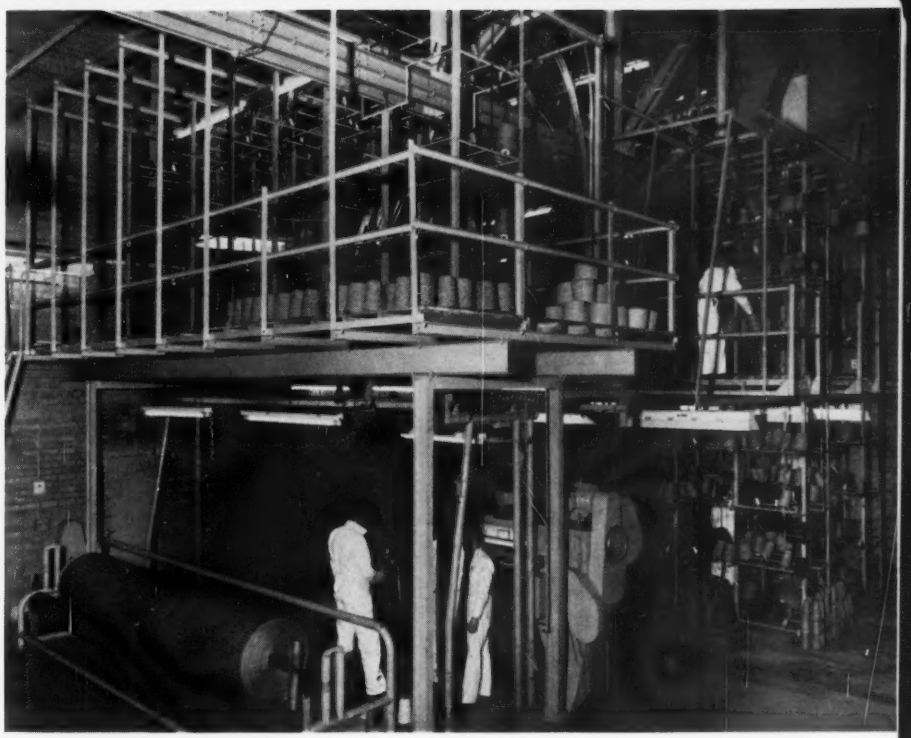

TUFTING machine in new Cyril Lord plant

In Northern Ireland A Big New Carpet tufting factory

By William A. Heath

WHAT IS REPORTED to be the most modern carpet factory in Europe recently went into production at Donaghadee, a small town 18 miles from Belfast, capital city of Northern Ireland.

The factory, built and operated by the Cyril Lord Organization, covers an area of 300,000 square feet and employs 775 workers. Round-the-clock production is carried on at the plant which is geared to turn out a minimum of 60 miles of tufted carpet a week. Annual value of the carpeting manufactured is estimated at $28 million.

The factory comprises a complete manufacturing unit where raw materials are received and processed, to leave the plant in the form of completed carpets which are cut, packaged and delivered direct to customers without going through normal wholesale and retail channels.

Fiber is received at the plant in bales which are fed to bale breaking machinery where the fibers—compressed during baling—are opened up to render them more workable. Compressed air blows the fibers through pipes to storage hoppers. From the hoppers it is fed into carding machines where a loose rope of sliver is produced.

Next in production sequence is the drawing process where the sliver is drawn out until the density required for spinning is obtained. When the sliver leaves the drawing frames and is spun into yarn on the spinning frames, it is then wound on to cones ready for the tufting process. The yarn is delivered to the tufting room by conveyor.

The original spinning machinery installed at the plant was a cotton spinning system suitably modified to produce carpet yarns. This has been augmented by a complete new system specially designed and constructed for the manufacture of carpet yarns by a Belfast company, James Mackie & Sons Ltd. This new spinning plant is said to be one of the most advanced of its type in the world.

There are two spinning rooms, each 240 feet long by 120 feet wide. They are completely clear of roof supports, while the suspended ceilings are clear of all projections and house approximately 300 fluorescent lighting fixtures. This is the sole means of illumination, as no natural light is admitted to the rooms. Above the ceilings is humidifying equipment which ensures correct conditions of humidity and temperature for the spinning of the yarns. Automatic regulation corrects any variations in these conditions.

The tufting department is equipped with machinery capable of tufting a wide range of carpets from plain to patterned in widths varying from 30 inches to 18 feet, both cut pile and loop pile being produced. Following tufting, the carpet is passed through latex applications and drying machines where a backing of latex compound is applied. Length of these machines is 150 feet. Drying is carried out in ovens heated by two means: hot air and infra-red heat. After drying rigid inspection procedures are carried through before cropping by shearing machines and removal to storage areas.

A special department is set up for the manufacture of the backing compound. Raw materials are stored in drums and the compound is mixed automatically and then transferred to storage tanks from which it is drawn as required. This department has a fully equipped laboratory where quality control is maintained and new compounds are investigated.

(Continued on page 60)

With your menswear customers—and their customers—these hang-tags are unmistakable symbols of outstanding quality. Converters, cutters and consumers alike have learned that *Fortrel polyester* and *Arnel triacetate* are positive assurance of lasting good looks with easy care. They bank on these famous Celanese fibers for minimum wrinkles and muss, maximum crease-retention—plus the simplest sort of upkeep.

This broad acceptance is no accident. Celanese backs these great fibers with great promotions. Powerful national advertising—together with all-out merchandising aid—constantly keep Fortrel and Arnel in the public eye. Retailers will be looking for Fortrel and Arnel tagged merchandise next fall . . . be sure these important fibers are in your lines! Celanese Fibers Co., 522 Fifth Avenue, N. Y. 36 (a division of Celanese Corporation of America).

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Celanese contemporary fibers

For hosiery knitters:
a labor-saving device

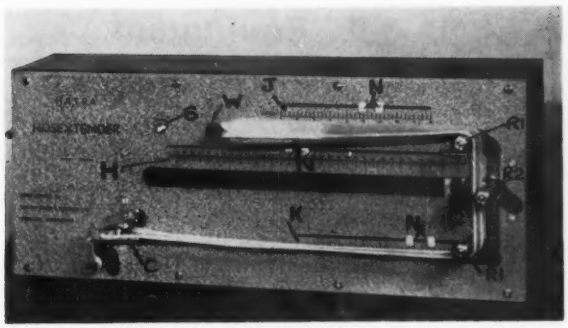
New instrument checks leg, foot lengths

By D. W. Harrison

THE PAIRING of stockings is a time-consuming and therefore expensive operation. Many efforts have been made to achieve more precise control over the leg and foot lengths so that the pairing process can be minimized. The problem of length variation in stockings has been thoroughly investigated by the Hosiery & Allied Trades Research Association (H.A.-T.R.A.), Nottingham, England. A quality control instrument, the Hosextender, has been developed which permits close control of stocking lengths to be achieved by providing rapid and simple means of checking the length of the stockings immediately after they have been knitted.

Until recently, the Hosextender was available only to members of the Association, but it has now been released for general sale. Sole selling agents are Shirley Developments Ltd., Saxone House, 52-56 Market Street, Manchester 1, England. The instrument was originally designed for use with fully-fashioned stockings, but a simple attachment allows it to be used for seamfree (circular-knit) stockings.

The principle of the Hosextender is quite simple. It is based on the fact that when certain load conditions are applied to an unfinished stocking blank, the measurement of the length of the extended blank can be used as a basis for comparison with similar measurements on other blanks. In the H.A.T.R.A. instrument, a load of 3 kg. is applied to the stocking blank, stretching it lengthwise under precisely controlled conditions, and extending the knitted loops into a standard configuration without actually stretching the yarn. Under these conditions, the extended loops take up dimensions which are proportional to the length of yarn in the loop (stitch length) and therefore to the dimensions of the stocking. This principle



READY FOR USE—New British instrument for measuring stocking lengths, showing stocking blank ready for testing. (Figure 1)

applies to all types of stitch structure used for the manufacture of stockings.

Operating Procedure

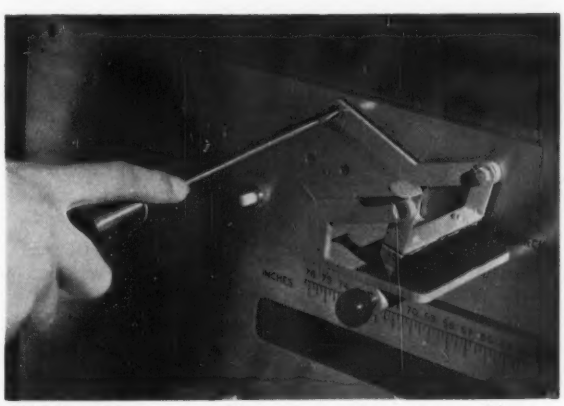
A commercial version of the Hosextender is shown in Figure 1. The welt of a full-fashioned stocking is placed over the welt-holding rod, W. For circular-knit stockings it is necessary to attach to the welt-holding rod a clamp similar to that used for holding the foot of the stocking (see Figure 2). Apart from this, the operating procedure for both types of stocking is exactly the same.

With the center roller R2 in the extreme right position, the stocking is passed to the right of the two fixed guide rollers R1 and to the left of the center roller R2. The toe is then placed between the jaws of the self-tightening clamp C, with the toe splicing level with the jaw. With the lever L in a horizontal position, switch S is pressed and a motor drives the center roller R2 to the left at a constant speed, extending the stocking slowly and evenly.

When the tension in the stocking reaches 3 kg., the motor is automatically stopped and the desired readings can be made on the engraved scales. The extended welt reading is made on scale J, the total stretched length on scale H, and the stretched foot length on scale K. The limit markers, N, are for use with a quality control system to suit the requirements of the user. When lever L is depressed, the center roller R2 can be returned to the starting position on the extreme right of the instrument.

The clamps which hold the stocking in position are designed so that the tests can be made immediately

(Continued on page 55)

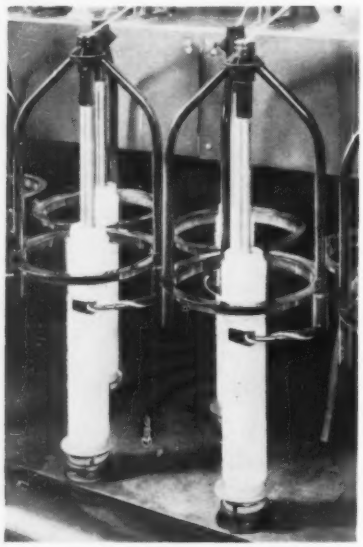


SEAMLESS, TOO—Clamp attachment on Hosextender to hold welt of seamless stocking blank

NEW Equipment Machinery

Hi-Speed Roving Flyer

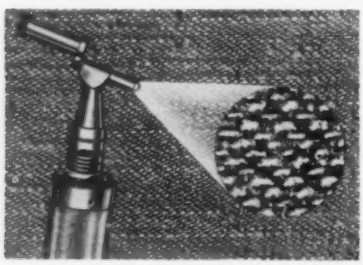
Roberts Co. reports it has developed and field tested a radically new design high speed roving flyer which can be applied to existing machines and which is also standard equipment on Rob-



erts roving frames. Advantages include, Roberts said, increased flyer speeds of 10% to 15% above existing flyers, up to 1,200 rpm, from 5% to 20% more roving on the bobbin, and consistently more even roving. *For further information write the editors.*

Inspection Light

Welch Allyn, Inc., has developed a new, self-powered inspection light with magnifying lens to simplify surface inspection of all kinds of textiles. The new light uses a miniature lamp of a type developed for medical instruments and is attached by a bayonet joint



to a chrome-plated, knurled battery handle. Handles are in two sizes to take standard C or D flashlight batteries. Magnification is furnished either by a fixed-focus 2x lens or an adjustable focus 4x telescope, depending on amount of magnification desired. *For further information write the editors.*

Two-Dimensional Viewer

A new two-dimensional viewer attachment for the Lindly thread and line inspector is now being offered by Foster Machine Co., exclusive selling agents in the textile industry for Lindly & Co. The viewer, which operates on photoelectric and optical principles, has four prisms. This permits the thread to be examined simultaneously from two sides, so that imperfections cannot be obscured. *For further information write the editors.*

Yardage Counter

Dunn Engineering Corp. has designed a yardage counter and control device which measures and regulates the amount of yarn being machine wound onto spindles of universal twisting frames. Designed for the carpet industry, the unit can be set at any desired yardage in 50 yard increments over the effective 2,100 yard range. Atkinson, Haserick & Co. is sales agent for the product. *For further information write the editors.*

Spinning Changeover

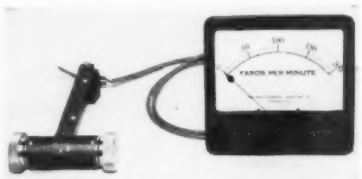
Saco-Lowell Shops has introduced a new double apron spinning changeover, the SG-3D, for converting all Gwaltney spinning frames equipped with the original single apron SG-1 or Shaw system, to the Duo-Roth system. The SG-3D changeover is said to provide a more effective control of the fibers in the draft zone and thus produce a better quality yarn. The new drafting element incorporates all anti-friction features of the present SG-3 Duo-Roth system. *For further information write the editors.*

Improved Idler Gear

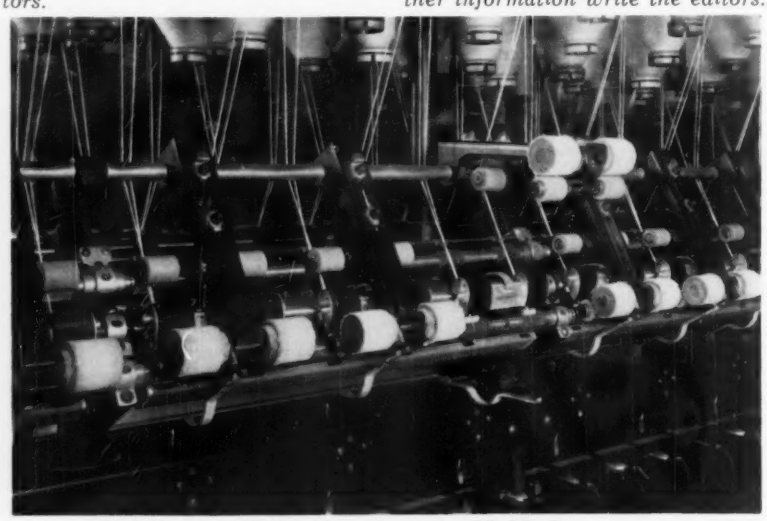
Crompton & Knowles Corp. is offering an improved 88-tooth idler gear for C & K W-3 and PAPA looms equipped with all-purpose takeup. The new design, which is recommended for weaves imparting heavy loads to the takeup mechanism, features needle bearings running on a hardened stud and provision for grease lubrication, all contributing to longer, maintenance-free service. Proper alignment of the gear is retained by the hardened stud, while use of grease fittings permit the lubricant to be distributed internally through the rifle-drilled stud to the needle bearings. *For further information write the editors.*

Warp Stretch Meter

Strandberg Engineering Laboratories, Inc., has developed a warp stretch meter which not only indicates percent stretch continuously but also automatically controls it. The apparatus can be tied in to a slasher drive in such a way, Strandberg reports, to automat-



ically regulate the relationship between the input or size box warp speed and the output or delivery speeds. The unit employs friction-surface rollers working in direct contact with the warp for rate measurement; consequently, the possibility of slippage is eliminated and no roll size or gear ratio accuracy problems exist. *For further information write the editors.*



CLOSE-UP VIEW of Saco-Lowell's SG-3D Changeover

Barmag 2-1 Twister

(Continued from page 42)

twisting. By taking this step, U.S. Textile Machine Co. puts itself in the position of being able to take advantage of modern technological advances in other countries and incorporate them into American-built machinery.

The 2-1 twisting principle has long been used in Europe both by the yarn producers and mills and has only been recently introduced to the United States market. The 2-1 principle permits twisting at high speeds by methods different from those commonly used in this country. Manmade fibers, natural fibers and blends can be processed by this method.

After careful study and experimentation in cooperation with many leading textile manufacturers, U.S. Textile Machine Co. recognized the need and saw the potential for this type of equipment when specifically designed for use by mills in this country. These methods, it is claimed, will obsolete conventional processes as known today and make possible better quality yarns, larger knot-free packages and will substantially reduce costs by ending many conventional operations.

U.S. Textile Machine Co. made its initial contact with Barmag two years ago at the Milan Exhibition and became exclusive representative of Barmag machinery for the United States. Then later some of the Barmag machinery was shown by U. S. Textile Machine at the American Textile Machinery Exhibition in Atlantic City, May, 1960.

The equipment is engineered specifically for each mill's requirements. In engineering the equipment, the complete facilities of both Barmag's fully equipped research and development laboratories as well as those of U.S. Textile Machine Co. will be used to assure highest standards of performance in operating this equipment. Barmag has 1700 employees, of which 200 are employed in research and development alone.

New Instrument

(Continued from page 53)

after knitting. The stocking is stretched by a constant-speed motor, and the load placed upon the knitted structure is therefore gradual and automatically controlled. Together with the automatic stopping arrangement when the correct load is reached, this system ensures that the operative has no influence on the results obtained.

The measuring scales marked on the front of the instrument are easy to read, although it is not necessary to read the actual values obtained if the limit markets are used in conjunction with a quality control system. In these circumstances, certain tolerances can be selected and it is sufficient for the operative to observe whether the stocking falls within or outside the *chosen tolerances.*

The Hosextender was subjected to intensive trails under laboratory and mill conditions before its design was finally approved. It has been shown that, in operation under actual mill conditions, it can predict the finished length of a stocking 95 times out of 100 (95 per cent. tolerance) to within ± ¾ in. for 15-denier and ± ½ in. for 30-denier stockings. The quality control system advocated by H.A.T.R.A. requires control of knitting to ± 1 in. in relation to a selected Hosextender reading; this is equivalent to approximately ¾ in. flat length.

It is obviously impracticable to obtain absolute uniformity of length in unfinished stockings and some tolerance must be chosen as a working basis. This tolerance must be such that it will result in stockings of the required finished dimensions. The standard which is fixed by the user of the instrument always remains the same for a particular size and style of stocking. It is suggested that the following tolerances should be used for the extended stocking lengths:

Fully-fashioned Stockings

Total length:	± 1 in. (T)
Welt:	± ¼ in. (W)
Splicing:	± ½ in. (S)

It has been demonstrated that, based on a knowledge of the total stretched leg length (T), the length to the top of the splicing (S), and the difference between these two values (T—S), it is possible to determine whether the main panel knitting stiffness or the rocker bar setting is the cause of the leg length or splicing height variation. Thus, for the stocking to be within a selected tolerance, it is essential for the value of T—S to be within a certain tolerance; a suggested value for this tolerance is ± ¾ in.

Circular-knit Stockings

Using the special clamp attachment shown in Figure 2, it has been found that a reasonable tolerance for the total stretched length of circular-knit (seamfree) stockings is 1½ in. It is stressed that the full benefits of the Hosextender can be obtained only if used as the basis of a well-organised length control system. The H.A.T.R.A. system consists of regular measurement of sets of stockings taken from the machine at reasonable intervals, together with suitable methods of recording the results obtained from the instrument. The Hosextender is covered by British Patent Specification No. 836,581 (T. S. Nutting and T. K. Morley).

Molded Nylon Fabric Offered

Liberty Fabrics is marketing a fabric made of nylon which can be permanently molded. First use is in the brassiere industry, where a number of firms are reported actively working on first fabric samples. Manufacturers of lingerie are also sampling and end-use in other forms of apparel is expected. The Liberty product, made of lace in its first version, can be utilized in more than 30 knitted or woven fabric constructions. Called "Libform," the fabric is the result of development and research work by Liberty and Chemstrand.

According to Liberty, the new fabric—in the bra manufacturing field—means the elimination of a greater number of cutting and sewing operations, since seams are done away with. The complete front and cup section can be molded to a specific size in one operation. Consumer advantages are: permanence of size and shape; can be machine-washed and dried without losing shape or size; absence of seams improves wearing appearance. *For further information write the editors.*

Stretch Skirts

Jo Ann Sportswear Co. is manufacturing ladies' skirts made of stretch fabrics. The fabrics, made by the textile division of United States Rubber Co. and sold through the Franklin Manufacturing Co., contain 34% nylon, 33% acrylic fiber and 33% viscose. The skirts are straight lined, belted, and with a waistband having an inner curtain that is elastic, making for greater stability and comfort.

THE TEXTILE DISTRIBUTORS INSTITUTE, INC.

NEWS AND COMMENT

TDI Annual Meeting Oct. 19

The annual meeting of the Textile Distributors Institute will be held on Thursday, Oct. 19 at the Statler-Hilton Hotel in New York City. The principal speaker at the meeting will be Andrew J. Sokol, vice president of J. P. Stevens & Co. The meeting will also hear the Annual Report of TDI president Irving Roaman. At the meeting also a slate of names will be presented for election to eight positions on the Board of Directors which are to be filled this year. The committee preparing the slate is made up of Louis Brenner, Shirley Fabrics Corp., Louis Kates, French Fabrics, Inc., and Arthur Raphael, Cameo Fabrics, Inc.

Plans Completed for Dinner-Dance

The annual Dinner-Dance of the Textile Distributors Institute will be held Nov. 9 at the Plaza Hotel in New York City, it was announced last month by Irving Roaman, president. Engraved invitations on white paper with fuchsia lettering will be mailed shortly to TDI members and others in the trade. As in the past, the Dinner-Dance will be preceded by a reception and smorgasbord cocktail party for all guests attending. Music for dancing will again be provided by Mark Towers' orchestra. Inquiries for reservations to attend the Dinner-Dance may be directed to Miss Hilda A. Wiedenfeld, Executive Director, Textile Distributors Institute, 469 Seventh Ave., New York 18, N. Y. LOngacre 3-2992.

Acknowledgment

In the August issue of this magazine we published on the page devoted to news of the Textile Distributors Institute four pictures of scenes from the recent TDI Musical Show staged at the Hotel Concord in Kiamesha, N. Y. Because of an editorial oversight we neglected to state that these pictures were the property of the Daily News Record. Our editors wish to thank the Daily News Record and its editor, Stephen S. Marks, for their gracious permission to use these photos.

Recent Freight Rates Increases

In a recent bulletin to members, the Textile Distributors Institute reported the following developments in freight rates as reported by John V. Hoey, Traffic Director of the National Textile Traffic Bureau. This is the freight rate service retained by TDI as a service to its members.

With regard to railroad pickup and delivery charges in official territory—effective July 22—the Interstate Commerce Commission lifted the suspension on the pickup and delivery charges via rail carriers, thereby permitting these charges to become effective July 22. These charges apply via rail carriers who previously did not assess such a charge and are applicable on shipments having origin or destination or both within Official Territory. This territory, roughly speaking, is bordered on the South by the Potomac and Ohio Rivers and on the West by the Mississippi River.

The pickup and delivery charges were originally scheduled to become effective on Oct. 24, 1960, but in the face of opposition and requests for suspension, the Interstate Commerce Commission suspended and investigated these charges. After investigation, as noted above, the Commission saw fit to permit the charges to become effective as of July 22, 1961.

The new charges range from a low of five cents per 100 pounds to a high of 60 cents per 100 pounds depending upon the station and the carrier.

The freight rate for less than truckload "any quantity" and minimum charges via motor carrier between points in the South and points in the East was increased six percent effective July 24, 1961.

Two New TDI Members

Two new members have been accepted by the Textile Distributors Institute, according to a recent announcement by Irving Roaman, president. The new members are Rosenthal & Rosenthal, Inc., 1451 Broadway, New York 36, N. Y. of which David Custage is vice president, and Diners' Financial Corp., 1411 Broadway, New York 18, N. Y., of which Wesley Simpson is president.

Vycron Booklet

Goodyear Tire & Rubber Co. has issued a new booklet describing Vycron, the polyester fiber spun by Beaunit Mills from Goodyear's Vital polyester resin. The booklet lists the fiber's outstanding features and its applications and potential end-uses. *For free copies write the editors.*

Hotte Joins Texplant

George H. Hotte has been appointed executive vice president of Texplant Corp. His principal activity will be in the firm's fibers, yarns and fabrics division. Before joining Texplant, Hotte was director of fiber marketing for Allied Chemical Corp. His headquarters will be at 695 Summer St., Stamford, Conn.

Whitin Sees Growing Demand

The annual sales meeting of the Whitin Machine Works was told by C. Roger Brussee, manager of marketing services, "that Whitin can look forward by 1965 to a major increase in textile machinery sales." Brussee said surveys have disclosed that U. S. textile mills, in order to remain competitive and show profitable operations, will be obligated to install large quantities of new equipment "to take advantage of the up-to-the-minute technological advances which are continually being introduced to increase productive capacity and improve yarn quality."

Whitin has named Claude M. Banks as manager of repair parts and changeover sales in the South. He will maintain headquarters at Charlotte, N. C.

A Millman's Guide to wash-wear finishes

(Continued from page 32)

at the temperature of ironing with a liberation of traces of hydrochloric acid. It is the release of this acid during ironing that impairs the strength of a bleached, wash/wear fabric.

Epoxides

In late 1956, new finishes based upon epoxy chemistry were introduced. There was a reasonable amount of commercial success in utilizing one such resin for the finishing of white cotton fabrics, particularly shirting materials. This product, Shell Chemical Company's Eponite 100, which is only one of a whole family of diglycidyl ethers of polyols has been particularly effective for producing stabilized, crease-proof, and wash/wear finishes, on white cotton fabrics for men's shirts, etc. This epoxy resin had outstanding properties such as:

(a) Complete durability of the finish to laundering.
(b) Complete resistance to damage by chlorine bleaches.
(c) Complete absence of amine and formaldehyde odors.

This resin family had the liability of requiring a very strong acid catalyst (zinc fluroborate) to produce best rest results. This factor, coupled with high costs, has limited its use.

A further advancement in the use of epoxy cross-linkers has been to use them in combination with nitrogeneous materials such as dimethylol ethylene urea. This move was a natural one because all of the available epoxy resins had, as I have mentioned before, one major problem and that was one of cost. By blending these two materials, a truly outstanding textile finish was produced without substantially reducing any of the desirable properties of the pure epoxy resins. However, such combinations have not attained real commercial acceptance, primarily because of the lower cost of Triazones and other competitive finishes.

Aldehyde Derivatives

There have been numerous efforts to produce resins for crease-proofing cellulosic fabrics using other chemical approaches to produce resins. There have been the phenol-formaldehyde materials, ketone-aldehydes, glycol acetals, and many many others. Despite the outstanding property of durability of finish, absence of chlorine damage, in each and every case there have been liabilities that far exceed these positive factors. Consequently, their commercial distribution and use has been negligible.

We have purposely not dealt in any detail with a major problem that seems to be almost inherent when discussing cotton finishing. That is the influence of finishing chemicals on dyestuffs. It is generally agreed that dimethylol ethylene urea has the most adverse effect on reducing light-fastness of dyes while straight urea resins not only have the least effect, but may in a few cases actually improve the light-fastness.

Some classes of dyes are affected worse than others, but it is claimed by those who have spent a number of years studying this particular problem that resins or reactants which are harmful in one class usually tend to be harmful to all. Certainly catalysts that are selected for use with resins contribute their fair share of the effect of reduction of light-fastness of dyes. The entire subject of dyestuffs chemistry is a most involved subject, and indeed the interrelationship of this type of chemistry with that of resin chemistry poses an exceedingly complex subject.

In the area of the newer caustic catalyzed resins or cross-linking agents, it is, of course, normal to treat the cotton after dyeing. Therefore, it is necessary to use only caustic resistant dyes so that color loss and shading will be reduced to a minimum. This is particularly true in multi-color work.

You might therefore ask the question, why not dye after finishing? This also has its inherent problems such as crocking, uniformity of dyeing, increasing difficulty in obtaining proper depths of shade, and other such liabilities. Some of these can be largely overcome; but unfortunately, the cost of dyeing goes up as each of these problems are solved.

We have all been extremely conscious of the development of potentially damaging chlorine retention on resin treated goods for many years. Such finishes when affixed to cotton goods may undergo a change during aging or laundering with the formation of progenitors of chlorine retention. This change may be minimized, but not entirely prevented, by producing a "hard cure" on cotton goods by using high concentrations of catalysts, and elevated curing temperatures. Such a "cure" results in a fabric serviceable under home conditions of laundering, but is still sensitive to acquiring damaging amount of chlorine after commercial laundering.

Wet Crease-Proofing Processes

During the past 3 years, we have all had increasing exposure to the term "chemical cross-linkers", and a great deal of excellent work has already been done in this area in an effort to impart wet memory to cellulosics. In the early stages of this comparatively new facet of wash/wear, it was felt that wet cross-linking when carried on, as the phrase implies, in the wet state, would improve only the wet crease recovery. There are new developments now being commercially offered that do not entirely corroborate this early formed postulate.

It certainly seems to be the notion that simple chemical monomers which can be used as direct cross-linkers in cellulose are inherently cheaper and more efficient than the resinous or polymer forming materials which are more commonly used in finishing today. This, of course, is the major appeal of epichlorohydrin, formaldehyde, and divinyl sulfone. To do this job of cross-linking, these chemicals are about as simple in molecule structure as one can imagine; but processes for using them are new and we must pay tribute to those willing to try the new approach. Although the chemicals themselves are relatively inexpensive, it should be remembered that the methods for the treatment of cotton with these materials is comparatively involved. Consequently, because of the sophistication of the treatments, and resultant cost incurred, such finishes are relatively expensive.

Wet crease recovery produced by wet cross-linking the cellulose when wet, with a product such as epichlorohydrin is ordinarily carried out by padding the fabric through a solution of caustic soda, then

(Continued on page 58)

A Millman's Guide

(Continued from page 57)

soaking in the di-functional cross-linker, where the cross-linking reaction took place. The wet crease-resistant properties that resulted were indeed high, but concurrent with these high wet crease angles was an extremely high tensile and tear strength loss. Also, the dry crease resistance left much to be desired. Therefore, it was found necessary to resin treat the fabric either before or after the wet cross-linking reaction, in order to impart an acceptable dry crease resistant effect.

Deering-Milliken Research Corp. has indeed been one of the early pioneers in this field. Their "Belfast" process has already received widespread reception. Since Milliken Research is a progressive organization, I would anticipate that they are continuing to study and make new improvements in this vast field.

Sulfone Chemistry

One of the newest and perhaps most exciting developments in chemistry for cross-linking reaction is the field of divinyl sulfone and sulfone chemistry, generally. One large textile organization, J. P. Stevens & Co., has done a tremendous amount of research and development work with sulfones. To date, however, Stevens has made no announcement indicating that it has commercially processed and marketed any fabrics with this kind of chemical cross-linking agent. Consequently, it is difficult to ascertain just what Stevens commercial success will be.

However, in very recent months, Monsanto Chemical Co. with their RTF-64 (now trade named Retane), and General Aniline & Film Corp., with their Ganalok-A-14, have been doing much work in this cross-linking field. Although neither company has made a public statement to confirm this fact, it seems to be a conservative guess that both materials are in the general sulfone chemistry field.

This therefore, means that neither contain nitrogen or formaldehyde, and therefore are free from the many, well established shortcomings of conventional treatments. Sulfone materials when properly applied display the following characteristics:

(1) Efficient wash/wear performance.
(2) Complete freedom from chlorine damage or chlorine retention, regardless of the wash procedure used.
(3) Outstanding durability—again regardless of the wash procedures used.
(4) No odor immediately following processing or after extensive storage.
(5) Excellent resistance to heat discoloration—equal to that of the untreated fabric.

The sulfone base chemicals are like the epi and glycerol dichlorohydrine reagents in that they are applied in an alkaline system. Conventional equipment is used in the application of these sulfone products. To date, one of the major problems incurred when using sulfone base materials for chemically cross-linking cellulose lies in the fact that the fabric after curing does possess a very much off-white or even yellow cast. Therefore, it is necessary in the vast majority of cases to open-width bleach the fabric in order to remove this discoloration and render the fabric white again.

Here again in the field of wet cross-linking, we may find a similar pattern to that which has been pursued by the thermosetting resin manufacturers and users; namely: the use of one of these cross-linkers for producing wet crease resistance together with (either before, simultaneous with, or after) another chemical, possibly yet even unannounced.

Rather recently we have been reading a great deal about Courtauld's Prestwick finish and also the Bancroft "Bancare" finish. Here again, we are talking about products and processes that are reputed to produce excellent wet and dry crease resistant effects. Based upon trade rumors, I think it an accurate guess that the chemical involved is formaldehyde that is being used to cross-link the cellulose to produce the claimed performance characteristics.

Prestwick

During the past year and a half, millions of yards of fabric finished with Prestwick (both cotton and rayon) have been processed and successfully evaluated by consumers throughout the nation. This particular process does not involve a resin, but rather a very simple and inexpensive chemical formaldehyde, that has been known to be a cross-linker with cellulose for many years. However, it is believed that the buffered catalyst used in this process is one of the prime reasons for its success and commercial controllability. It is claimed that this process does indeed have a very high efficiency in imparting dimensional stability to the fabric as well as good wet and dry crease memory. This process like so many other resin and cross-linking chemicals does impart tensile and tear strength losses.

Bancare

It is stated that this process is non-resinous, and the chemicals are readily available. This would give credence to the guess that the material used for cross-linking is formaldehyde. The assets of this kind of finish are said to be good wet and dry crease recovery, good shrinkage stabilization, good durability, and no chlorine retention.

With such a wide array of crease proofing agents available, it would be very helpful to be able to predict from the chemical structure the exact properties each compound will impart to the treated fabric. However, this is not the state of the art today for, we just don't know that much about it at the present time. There are many factors that complicate the situation, not the least of which is the many end use requirements that a broad range of wash/wear treated fabrics must exhibit. A knowledge of the structure is helpful in predicting properties, but no product is ideal for every use. In most instances, a product is chosen because it is outstanding in a few important properties, even though it may be average or possibly even slightly deficient in others.

C & K Broadens Know-How

Crompton & Knowles Packaging Corp. has concluded a trans-Atlantic "technical partnership" agreement with Clavell, Bate & Nephews Ltd. of Nelson, England, a leading British packaging machinery manufacturer. The American firm is a subsidiary of the Crompton & Knowles Corp., while Clavell, Bate & Nephews is a subsidiary of the Hindley Brothers group of England.

Object of the affiliation, the American firm said, is the "complimentary exchange of packaging machinery experience so that both companies can strengthen their respective overseas operations."

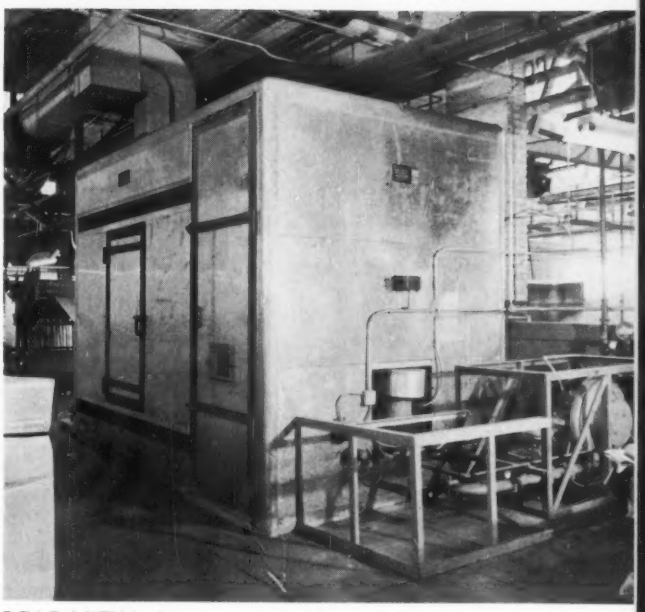
Curing Oven

(Continued from page 34)

pitch fan which is variable through a wide range of air volumes and pressures without changing fan or machine to meet changing processing techniques or capacities. Fan mounting is provided with an insulated cover for the fanbearings and the lubrication system is ventilated to room conditions. This improves smoothness of operation with virtually no maintenance. Fabric tension is adjustable and reproducible through use of torque drives on all top rolls. All roll bearings are on the outside of the heated curer.

The curing oven at Jersey Dyeing is gas fired. For this type of installation, National provides a safety-engineered system which is given the highest rating by insurance underwriters. This gas burning unit comes as a completely separate package in its own structural frame. The only connections to be made in the field are to the gas supply.

"Price isn't the only consideration," says David Klein, president of Jersey Dyeing Co., is discussing the highly competitive commission dyeing and finishing business. Klein and Jack Ravitz, secretary and plant manager, are conscious of what modern equipment will do for them, especially quality-wise. They have found that they can do things on the "National" Curer that straight tentering won't permit. Besides print fabrics, Jersey Dyeing runs certain plain goods through the curer where resin is used to obtain residual shrinkage.



REAR VIEW of curing oven shows gas-burning unit which comes as separate package

Olefin Carpet Fiber Offered

A new high-resiliency polypropylene fiber—developed especially for carpets—has been introduced by Montecatini. The new fiber, offered under the tradename Meraklon, is said to have a crush recovery comparable to that of top carpet fibers available today, and also offers excellent performance in the range of other properties required by U.S. carpet makers for their premium products.

Meraklon's unusually low specific gravity (0.91) is said to make it the lightest weight fiber presently available. This means that a given amount of the new fiber will give 25% more cover power than an equal amount of wools. The Meraklon product is available in both 15 and 25 denier at 85 cents a pound for natural, delivered mill, with the majority of melt or solution-dyed colors delivered to mill at 95 cents a pound.

Several leading manufacturers are at this time completing intensive studies on the new fiber prior to incorporating it into their line. Precautions are being taken by both Montecatini and the carpet manufacturers to insure against premature marketing of the fiber.

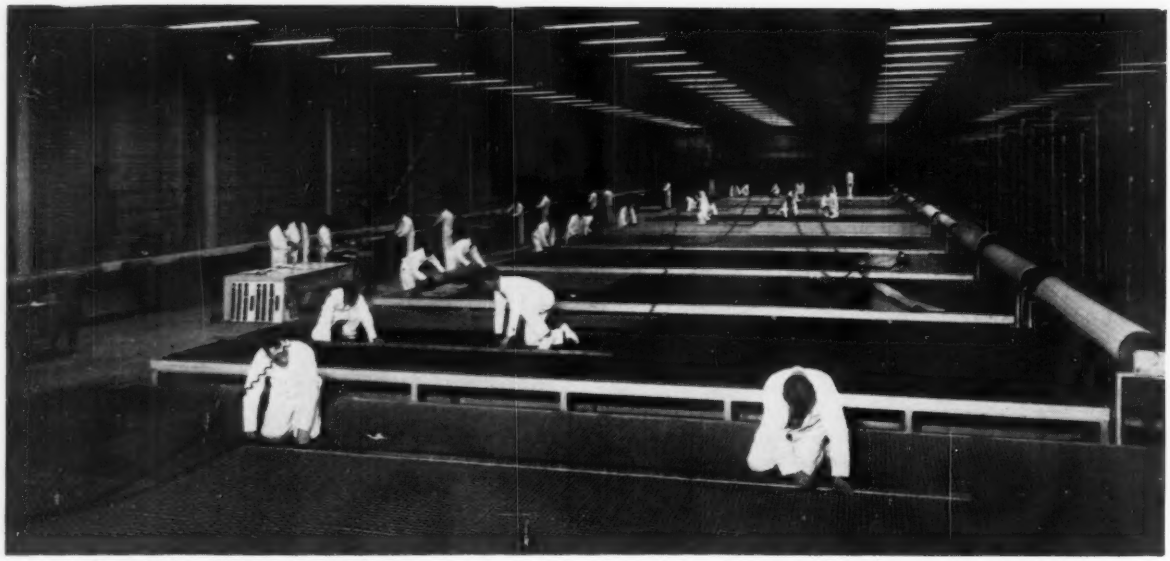
A plant at Terni, Italy is now producing some 20 million pounds of Meraklon a year, with capacity to reach 60 million pounds annually by the end of 1962. Montecatini's U.S. production facilities are expected to be ready by late 1962.

Southern Textile Show To Get New Building

Textile Hall Corp. will construct a 160,000 square foot building—expandable to 300,000 square feet—on a 30-acre site adjoining the Municipal Airport, Greenville, S. C., to house the Southern Textile Exposition and other shows for business and industry of the southeast. The new building will be approximately 50% larger than the present Textile Hall and all its annexes.

The 1962 Textile Show will be held October 15-19 in the present Textile Hall facilities. J. E. Serrine Co., engineers, will prepare plans for the new building which will be completed in time for subsequent shows. Yancey S. Gilkerson has been named executive vice president of Textile Hall Corp. to assist in the direction of the expansion program. Miss Bertha M. Green, corporation secretary, will continue as director of the Southern Textile Exposition.

The corporation is a non-profit organization formed before World War I by leaders of southern textile firms. James H. Woodside, president, pointed out that the new building will be easily accessible to visitors arriving either by air or auto.



CUT TO ORDER—In this cutting room, tufted carpets are cut to customers' requirements

New Tufting Plant

(Continued from page 51)

Carpet cutting is carried on in a room 460 feet long by 120 feet wide. Like the spinning room it is clear of any supports. One side of the cutting area is lined with storage racks to take the finished carpeting. On the opposite side are rows of cutting and packing tables where carpeting is cut to customers' requirements and then packed. Packaged orders are sent by conveyors to a dispatch bay.

Transportation of raw materials to the factory from Belfast docks is accomplished with the company's own fleet of vehicles. This comprises five towing units and 13 trailers. Packaged orders of finished carpets are stowed in containers, according to final destination, and taken to railhead or dockside by the same vehicles on their outward trips. In an average month something like 300 fully-laden containers are despatched from the factory.

The main administrative offices form part of the factory and incorporate an observation room which overlooks the entire spinning area. Testing of fibers, yarn and finished carpeting is the responsibility of staff technicians who work in a modern laboratory in the administration area.

Excellent welfare facilities are a feature of the factory. A central kitchen provides employees with meals taken in two canteens and two staff dining rooms. There are additionally two first-aid rooms, a rest room and spacious cloakrooms with showers. A high safety record is maintained, helped by the fact that all machinery is individually driven, thus doing away with overhead drives that are a feature of many textile factories.

Selling methods are novel to the British carpet industry. Over 15,000 part-time agents operate on a nationwide network in addition to a full-time sales force being organized to cover the whole country. Householders order direct through these agents, and to choose from they have a range of carpets embracing 27 plain colors, 18 mottle blends and three pattern designs over a range of 24 color combinations.

AATT Annual Meeting Set; Richardson Named Chairman

Dr. Graham M. Richardson, of Du Pont's Textile Fibers Department, has been appointed chairman of the Annual Conference of the American Association for Textile Technology. The conference, set for February 7, 1962, will be held at the Hotel Commodore, New York City. Dr. Richardson, supervisor of nylon staple and tow in his firm's technical services section, has had broad experience in many phases of the processing and marketing of textile fibers.

In accepting the Chairmanship, Richardson noted that it was the success of the 1961 national conference that prompted the Association to continue the event on an annual basis. "The meeting last February certainly was one of the highlights of the year for the field of Textile Technology," Richardson said, "and we shall do our utmost to even surpass that program. We have in mind a provocative theme that will interest not only technologists, but marketing men as well, and are now in the process of selecting panel members who will assure us lively sessions. Announcements will be forthcoming as our program develops."

The papers presented at the 1961 AATT national meeting have just been published in a special edition of MODERN TEXTILES MAGAZINE. Copies are available at one dollar each by writing the magazine at 303 Fifth Ave., New York 16, N.Y.

AATT Nominating Committee

A nominating committee has been selected to name a slate of candidates for election to serve as officers and board members of the national organization of the American Association for Textile Technology, Inc. The members of the nominating committee are Elizabeth C. Ramsey, chairman, Good Housekeeping Institute; H. Michael Strub, Jr., Duplan Corp.; Leonard J. Harris, Maiden Form, Inc. They will nominate officers and board members for 1962.

Simple Test

(Continued from page 28)

Sliver guides and positioning of sliver cans are an additional factor of importance, and checks should be made to assure that proper practices are followed by the frame operators in minimizing these sources of stretch variation.

Lap Creels

Where laps are used, such as on pickers, cards and combers, stretch draft excesses and slippage of the lap on its supporting rolls will contribute to quality problems. In evaluating variations in the creel draft, it is usually not feasible to use chalk marks. Instead, weighing of packages produced from equal-length runs is recommended. Variations in package weight then give a clue to creel troubles.

In general, creel draft variations on laps are of less seriousness than those in roving and spinning. Yet, the quality-conscious mill would desire to check lap drafts in the creel at least once a year on all machines.

Control Charts

Mills with well-developed quality control programs will find it desirable to plot weekly test results from creel draft variations checks on statistical control charts. The standard type of percent defective control chart may be used. The percentages are derived from the calculations shown in the "Evaluation" section of the Test Procedure in Exhibit 1.

From past experience, a standard for the normally allowable percentage of off-standard deliveries is established. The control limit is then found from:

$$C.\,L. = p + 3 \times \sqrt{pq/n}$$

where:

C. L. is the control limit,

p is the normal (and allowable) percentage of off-standard deliveries (stretched or slack).

q is equal to 100 minus p.

n is the number of deliveries checked.

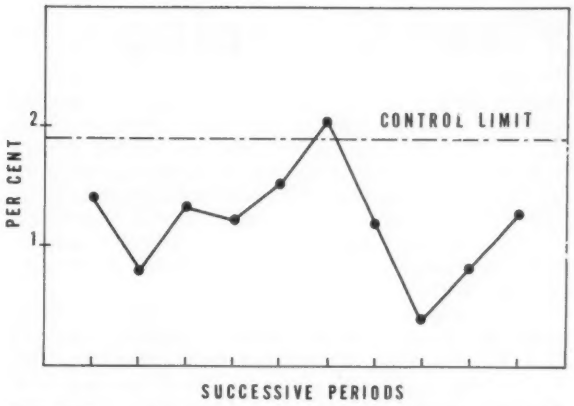


FIGURE 1—Control chart for percent off-standard deliveries (stretched or lagging roving).

The figure 3 is taken from control chart practice (1, 2), and results in the standard limits. As an illustration, let us assume that 3 frames with a total of 1,000 spindles on a particular yarn style have been checked. From past experience, one per cent of off-standard creel occurrences are considered normal and allowable. Then, the control limit would be found from:

$$C.\,L. = 1\% + 3 \times \sqrt{1\% \times 99\%} = 1.9\%$$

A typical control chart is shown in Figure 1.

Concluding Points

Variations in the draft in the creel may easily be overlooked, because the amount of stretch draft that does occur is generally small compared to the draft in the drafting zone itself. Yet, in many instances, stretch draft variations can be large enough to give quality problems. Control of creel draft variations will not only avoid these problems, but improve running conditions. Production costs, product quality and saleability are thus benefitted.

Literature Cited

1. Enrick, N. L. "Quality Control through Statistical Methods," 1954, publ. by Modern Textiles Magazine, New York 16, N. Y.
2. Enrick, N. L. "Quality Control," 4th ed, 1960, Industrial Press, New York 13, N. Y.

Roberts Co. Buys Greenwood Plant of Southeastern Loom

Southeastern Loom & Machine Works has become the Greenwood Division of Roberts Co. on September 5 under a purchase agreement concluded recently. The announcement was made jointly by A. W. Gunn, executive vice president of Abney Mills, Inc., which owns Southeastern and by Robert E. Pomeranz, president of Roberts.

Thirty-eight acres of land and a plant of 135,000 square feet built in 1957 comprise the Southeastern facility. A complete gray iron foundry and all machinery, equipment, tooling and patterns are included. The sale is outright with no shares involved. Southeastern has been making loom repair parts, card coilers and roving frames, with about 175 people employed. As a division of Abney Mills, most of its shipments have been to Abney plants, but some outside work has been sold. Roberts is a 13 year old producer of yarn making machinery, particularly Arrow Spinning Frames and modernizations. 750 are employed in its five plants in Sanford, N. C.

"We are delighted to have this opportunity of working in Greenwood," Pomeranz stated. "Our present plans are to expand the foundry, give it full metallurgical quality control and make it as modern as any in the South. We will enter the loom repair parts field, and introduce other yarn making machines."

"By this location right in the heart of the textile industry, we should be able to better serve our spinning customers, too. We feel this is a major step in our overall program of growth since it provides the capacity to nearly double our sales, increases our yarn producing machinery product lines, and puts us in several other profitable textile machinery fields."

More Cotton Clothing

U. S. apparel production consumed more cotton in 1960 than in any previous year, according to a National Cotton Council study. Preliminary figures were said to have shown that cotton held 62% of the apparel uses in 1960, compared with 61% in 1959. The study included more than 400 fiber end-uses. Record quantities went into men's, women's and children's apparel, and cotton's percentage share was the largest since the end of World War II.

Fiber Crimping

(Continued from page 38)

characteristics found in natural fibers. Crimping makes it possible to process synthetic fibers in existing natural fiber machinery, such as carding, combing, pin-drafting, roving, and spinning machines. In addition, crimped synthetics have an improved hand and the appearance of natural fibers in both spun yarn and finished garments. Crimping is also important in modified filament yarns, where a continuous crimped effect is highly desirable.

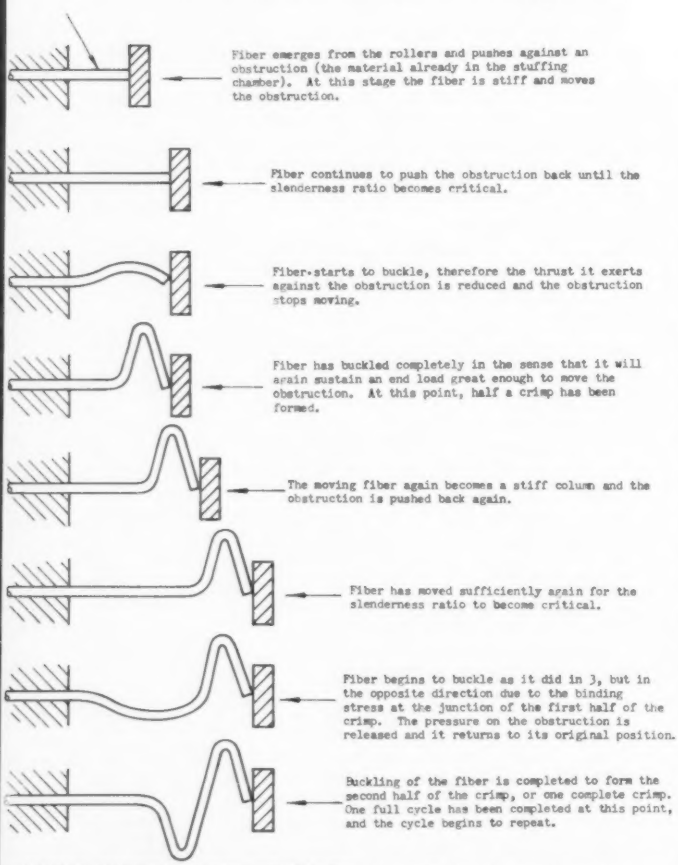
Today, the study shows, most crimping is done on machines which squeeze the fibers between a pair of driven rolls, and force them into an obstruction, causing them to bend. This produces two types of crimps: primary crimp and secondary crimp; or fold-over.

Primary crimp is caused by the failure of fibers as columns. The portion of fibers grouped by the feed rollers may be considered as the built-in end of a column; the portion of fibers pressing against those already in the stuffing box may be considered the free end of the column. As the fiber is bent by the roller and fed into the stuffing box, the slenderness ratio of the column increases until failure occurs, and a crimp appears.

In one machine, synthetic tow is fed into the crimper at a 45° angle. The band of tow is presented to the machine in a consolidated, rectangular form which is approximately equal to the roll width. A final consolidation is made by the in-feed guides of the machine to create an even edge which, when compressed by the rolls, will bring the fibers just to the side plates. The success of tow crimping is directly dependent on the uniformity, parallelism, and cross-section of the tow entering the crimper. If, for example, a 100,000 denier tow has been through a stretcher in a wide band prior to crimping, it would have to be consolidated into a flat, rectangular section to fit the roll width.

Here is Turbo's conception of what happens as the fibers pass through the rolls and enter the stuffing box:

1) Fiber emerges from the rollers and pushes against an obstruction (the material already in the stuffing chamber). At this stage the fiber is stiff and moves the obstruction.
2) Fiber continues to push the obstruction back until the slenderness ratio becomes critical.
3) Fiber starts to buckle, therefore the thrust it exerts against the obstruction is reduced and the obstruction stops moving.
4) Fiber has buckled completely in the sense that it will again sustain an end load great enough to move the obstruction. At this point, half a crimp has been formed.
5) The moving fiber again becomes a stiff column and the obstruction is pushed back again.
6) Fiber has moved sufficiently again for the slenderness ratio to become critical.
7) Fiber begins to buckle as it did in 3, but in the opposite direction due to the binding stress at the junction of the first half of the crimp. The pressure on the obstruction is released and it returns to its original position.
8) Buckling of the fiber is completed to form the second half of the crimp, or one complete crimp. One full cycle has been completed at this point, and the cycle begins to repeat.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HOW FIBERS ARE CRIMPED is explained step-by-step in this schematic outline.

Creation of Secondary Crimp

At the beginning of the crimping cycle, movement of the fibers is restricted to the plane through the nip, and therefore, the primary crimp started in this plane. As more fibers move into the stuffing box and buckling proceeds, the plane of the crimp is reoriented to accommodate the increase in linear density due to the crimping of the fibers. The fibers which have been subjected to primary crimp develop into another column of greater density. This column will project itself into the stuffing chamber with a greater slenderness ratio. When the column again buckles, it will build up in a plane at right angles to the plane at which the primary crimp was formed. This creates the secondary crimp which is visible in a band of crimped fibers. Secondary crimp has greater amplitude and lower frequency than primary crimp.

The adaptability of fibers to crimping frequencies and amplitudes depends on their original softness or hardness. Fiber manufacturers, the survey reports, are endeavoring to produce an even crimp with greater amplitudes and frequencies in the order of 15 to 20 crimps per inch. Low crimp gives the fibers a silky hand and produces a lustrous fabric. Higher crimps give a woolier hand, duller fabrics, and provide better covering properties which mean lighter weights.

Most industry sources seem to feel that there are two major requirements for producing properly crimped fiber: The fiber must be adequately crimped

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Fiber Crimping

(Continued from page 62)

at the nip of the two rollers; and the moving fibers must feel the correct resistance to give the crimp pitch required.

In-band preparation of the fibers prior to crimping is probably the greatest factor in obtaining a uniform crimp. This means that a band of fibers, uniform in cross-section and density, should approach the rollers. Theoretically, it would be an advantage to have a band of fibers only one fiber deep. This, however, is not practical, nor is it known what is ultimate for a given set of conditions.

To date the design of stuffing chambers has been dictated by the roller sizes, and the speed with which the rollers can drive the fibers into an obstruction. Hence, the vertical openings of the stuffing box have been fairly large. This large vertical opening contributes to a non-uniform crimped band due to variation in back-pressure as secondary crimp is formed.

While crimping results are much more predictable than they were a year ago, the survey reports, there are still many factors about which little is known. One of these is the fiber itself. Synthetic fibers, when presented to the crimper, vary greatly in their adaptability to crimping, depending on whether they are hard or soft, hot or cold, what filament denier is used, and what spin finish has been applied.

Perhaps the least understood aspect is the effect of high speeds on crimping frequency and permanency. For instance, a crimping roll producing 16 crimps per inch at 1,000 yards per minute bends the fiber 9600 times per second. The effect of the temperatures resulting from this rapid processing, or the changes in the molecular structure of the fibers, are not known.

The Turbo survey indicates that moisture content and temperature of tow entering the crimper vary greatly. In some cases, dry tow in the order of 5% to 10% moisture content is being used. In other cases, the tow is used soaking wet. Another unknown is the coefficient of friction of the fibers against each other and against the walls of the stuffing box.

Crimp retention is affected by the length of time fibers remain in the stuffing chamber and temperature changes during the crimping process. The stuffing box and the rolls may be heated or cooled, depending on the fiber and the type of crimp required.

Most of the producers and spinners surveyed feel that they will be able to duplicate any crimped effect with assurance and accuracy in the very near future. Turbo crimpers are now being used on a wide variety of fibers, including acetate, acrylic, glass, modacrylic, polyamide, olefin, polyesters, rayon and vinal.

Nylon Use in Tires Up

Nylon's share of truck tire sales reached an all-time high in the 1961 first quarter, according to figures released by Chemstrand Corp. The figures show that more than 60% of all replacement truck and bus tires shipped in the first quarter were made of nylon cord, the highest percentage recorded to date. During 1960, 55% of all truck and bus tires shipped for replacement were made of nylon, Chemstrand noted.

Another record high mark was set in the 1961 first quarter when more than 36% of all truck and bus tires shipped for original equipment casings were made of nylon cord.

Total nylon cord fabric consumed in tire making in the 1961 first quarter showed an increase of 3.12 million pounds over usage in the 1960 fourth quarter.

Zantrel Dress Goods

Hartford Fibers' Zantrel Polynosic rayon has been introduced in a new line of Zantrel blend novelty dress fabrics by Goldstein & Leavy, Inc. Produced in 45-inch width, the fabric contains 55% Zantrel and 45% Arnel triacetate.

Jack Marstan's Fall and Holiday line features Zantrel as the filling in the firm's "Power-Play" one-way warp stretch fabrics, which are composed of 65% nylon stretch in the warp. The line is available in two basic constructions: a 47-48-inch wide satin face and a 47-48-inch gabardine, both available at $2.80 a yard to the cutter.

A Zantrel blend two-tone fabric in a novelty weave has been introduced by Burlington Shirting Co. division of Burlington Industries, Inc. Called "Silkalene," the cross-dyed fabric has a "honan" type weave and contains 50% Zantrel and 50% Arnel triacetate. Designed as a year-round men's sportshirt fabric, the Spring '62 color line offers 12 light and medium shades, including five white-based solids and seven iridescents.

Chinese Textile Trade

Red China's exports of cotton fabrics are twice those of the United States relative to domestic production in each country, according to William F. Sullivan, president, Northern Textile Association, Boston, Mass. Citing reports made by Japanese and western European observers, Sullivan said the textile machinery industry was not even initiated in Red China until 1960 when machinery plants were built in major textile centers.

Red China, the NTA president said, has doubled its textile industry, and increased cotton fabric output nearly four times, since 1948. During the same period the U.S. textile industry declined nearly 20% in cotton system spindles and 57% in woolens and worsteds. Raw cotton production on mainland China rose from 2 million bales in 1949 to 11 million bales in 1960. China and the U.S.S.R., Sullivan said, now produce 29% of the world's raw cotton, and indications are they are striving for further production increases.

Reliable sources in the Far East, Sullivan pointed out, believe the Red Chinese cotton fabric export trade may be conducted at a loss in order to advance Communist political influence, "and many are of the opinion that Red Chinese textiles are being processed in Hong Kong for shipment to this country."

Hovotex Drapery Header

Substantial cost and production savings in ready-made and custom-made draperies manufacture are said to result from the use of a nonwoven drapery header material of 100% Avisco rayon, made by Hollingsworth & Vose Co., The new product, Hovotex DH nonwoven header fabric, has been designed to overcome many problems encountered in the use of woven buckram. The strength and crisp appearance of the headers are obtained by the use of Avisco rayon and special binders, with a permanent finish built into the fabric. *For further information write the editors.*

Inspecting Eastman acetate yarn

Eastman's Progress

(Continued from page 22)

carpets and pile apparel fabrics. Its freedom from flammability currently is opening new end uses for it in areas where fire hazards and their reduction are important such as draperies, bed tickings and pajamas for hospitals. Last but not least, Eastman is convinced that Verel has a big future in blankets where its warmth qualities, its durability in wear, and its bulking characteristics all combine with its resistance to burning to make it a fiber of much promise.

Having broken out of the cellulosic confines with Verel, Eastman capped yarns of research and analysis of the broadening spectrum of noncellulosic fibers with the introduction in 1958 of Kodel, its candidate among the polyesters. Not lightly was this decision taken to bring out a fiber to compete with Du Pont's Dacron, already well-established, and to do battle with other new polyesters being readied such as Beaunit's Vycron and Celanese's Fortrel. Eastman's management was convinced that Kodel had something that the other polyesters lacked.

Eastman had first to be convinced that there was a need for Kodel, that the fiber had properties that would make it wanted by mills, converters, garment manufacturers and most important of all, by consumers once these advantageous properties became known. As Churchill puts it, expressing Eastman's attitude toward a new fiber: "There must be a reason for a new fiber. Too many fibers have been brought out without good reason. A new fiber, to justify its introduction must show convincing evidence of offering desired properties and performance values at an attractive price."

Kodel, Eastman believes, is such a fiber in a strong way. Its big particular advantage, aside from performance, is its high marks, in Eastman's opinion, when measured in terms of fabric aesthetics. Because of the strong feeling shared by Churchill, John Sherrill, and Amos Griffin, Eastman's Merchandise Director, that its capacity to increase the aesthetic quality of fabrics, as measured by hand, appearance, softness and comfort is high, they see Kodel as essentially an apparel fiber. They feel that Kodel has put safely behind it its initial difficulties and disappointments—difficulties and disappointments that seem, with hardly any exception, to mark the debut of all new fibers. And ahead they see a bright future of increased acceptance and thereby increased output and increased profits from their new polyester.

With its initial successes in men's dress shirts such as Manhattan Delcot, with its current appearance in wool blend yarns spun on the woolen system, already mentioned, Kodel, in Churchill's opinion, is fairly off the ground. To get it soaring even higher on its way to becoming a major manmade fiber, Eastman is currently readying an ambitious new promotional, advertising and quality control plan.

Tradename Identity Sought

The foundation stone of the Kodel marketing structure Eastman is working hard to erect provides for a strong effort to fix the identity of the tradename in the minds not only of textile people and retailers but consumers as well. That this undertaking is difficult, ambitious and bound to be terribly expensive, Churchill and his fellow workers well realize. But, as they see it, there is no other course open for them if they want really to make Kodel a major fiber with major acceptance and big volume poundage consumption.

Thus in Eastman's promotional plans there will be as little talk about "a polyester fiber" as possible and as much as possible emphasis on the brand name Kodel. To this end, Eastman for the first time in its fiber merchandising, is embarking on cooperative advertising with retailers on a 50-50 basis for items that are identified in retail advertisements as made with Kodel. It follows from this, of course, that the manufacturers of garments named in such ads will be required to provide labels and tags stressing their Kodel content.

While currently, Eastman's plans for expansion in textiles are strongly centered on Kodel, the company is moving ahead in research and development of other new fibers. Most promising and nearest to commercial introduction is a new elastic fiber as yet unnamed. Unlike Du Pont's Lycra and U.S. Rubber's Vyrene, Eastman's elastomeric synthetic is not a polyurethane material and thus is not a spandex fiber according to the definition of the Federal Trade Commission. The new fiber is a polyester with a high degree of stretch and bounce back. Initial end uses are expected to be in foundation garments, bathing suits and surgical stockings. Beyond these, Robert Churchill sees a broad variety of successful uses in fields where elastic yarns of the established types have not yet penetrated.

As a major producer of polypropylene plastics who is also in the manmade fiber business, it was a virtual certainty that Eastman would delve deeply into the possibilities of polypropylene for textile purposes. The result is a polypropylene fiber which Eastman believes has many advantages over the olefin fibers of others in this crowded field. Among these is a satisfactory acceptance of dyes. But whether Eastman will introduce its polypropylene fiber commercially

(Continued on page 75)

Draper's New Loom

(Continued from page 40)

anti-friction, non-adjustable treadles are standard equipment.

A terry motion with positive top beam let-off for pile warp is available for weaving terry fabrics and towels. A series of take-ups and take-up roll coverings is also available. The new loom can be constructed with either a center or side fork filling motion.

Power is provided by a transmitter drive which combines clutch, brake, and motor in a compact and efficient single unit.

The loom is delivered with optional let-offs which include the #4 automatic Bartlett, the Draper #2 Tru-Tension, and the Hunt Let-off. Beam flanges, ranging from 22" to 28" may be either fixed or adjustable. A simplified yarn-beam bearing construction permits easier positioning of the beam and the handling of different sizes of flanges.

The link-type parallel, which controls picking action at high loom speeds, and which is said to improve loom operation and reduce wear on pick motion and parallel parts, is used on the new model.

Looking ahead to the important area of filling winding which is currently under close scrutiny by many mills, the X-3 model loom can take the standard rotary battery, the Unifil loom winder, or the Draper automatic filling magazine which has been recently improved by adding a mechanical extractor, thereby doing away with the need for a compressed air hook-up. The rotary battery will take all bobbins up to 8¾" and the Unifil loom winder, it will be noted, has recently been modified to take the longer bobbins. The automatic filling magazine, currently for 8¾" bobbins only, provides a filling supply of up to 192 bobbins, 1¼" dia.

A new electric warp stop motion (maximum 6 banks) may be applied to this loom which permits adjustment of electrodes above warp supports and allows for a varied assembly of electrodes, and flat or round lease rods. Other stop motions are also available, either mechanical or electrical with up to 8 banks of drop wires.

Mills are finding that on the X-3 model loom the available space on the take-up roll and cloth roll and between the temples is sufficient to allow weaving cloth wider than the nominal size of the loom when construction is such that there is enough reed space and take-up roll space. In other words, on the loom model with a nominal size of 40", the maximum overall reed length is 49¼" and the available space for cloth on the take-up roll and the cloth roll is 44". At the same time, on the widest loom size of 72", maximum overall reed length is 81¼" and the available space for cloth on the take-up roll and cloth roll is 76".

Nylon Cord Tire Sales

Almost 50% of all passenger tire replacement sales in 1960 were nylon cord tires, according to Du Pont's Information Service. This indicates a substantial gain over 1959, when 38% of passenger tire replacement sales were nylon.

Du Pont reported that Bureau of Census data discloses that production of nylon tire cord in 1960 reached an all-time high of 139,000,000 pounds, an increase of 15,000,000 pounds over 1959, while rayon tire cord output in 1960 dropped by more than 55,000,000 pounds from the previous year.

PLAN GROWTH THROUGH FACTORING

IT'S A "BLUE CHIP" INVESTMENT FOR THE FUTURE

ISELIN-JEFFERSON FINANCIAL OFFERS YOU THIS "FACTORING PORTFOLIO"

- ADEQUATE WORKING CAPITAL to meet current requirements and growth potential.
- STOP LOSS ON COLLECTIONS with all credit risks assumed by us.
- EXTRA DIVIDEND . . . more time for your planning and sales — "Time Is Money".

ISELIN-JEFFERSON FINANCIAL COMPANY, INC.

111 WEST 40th ST., NEW YORK 18, N.Y.

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarn, staple and tow as reported by the producers in September 1961. All prices are given to change without notice.

CELLULOSIC YARNS

ACETATE

American Viscose Corp.

Current Prices Effective March 22, 1960

Bright and Dull

Denier & Filaments	Intermediate Twist** Twister Cones	Twister T-Tubes	Warps	Spinning Twist Cones & C-Tubes	Warps
40/11	$	$	$	$	$1.14
45/14	....	....	....	....	1.03
55/14-20	.99	.97	1.00	.93	.87*
75/18	....	....	....	....	.90
75/20	.95	.93	.96	.89	.90
100/28	.91	.89	.92	.85	.86
120/32	.82	.80	.83	.76	.77
150/36	....	....	....	....	.70
150/41	.74	.73	.75	.69	.70
200/54	.70	.69	.71	.66	.67
240/80	....	....	....	.65	.66
300/80	.66	.65	.67	.62	.63

* Tricot Spools Only.
** Standard Twist 2¢ Additional.
Terms: Net 30 Days.

Celanese Fibers Company

Current Prices Effective March 22, 1960

Acetate Filament Yarn Prices
Bright and Dull

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	4-Pound Cheeses	Spinning Twist Cones	Beams	O Twist Tubes
45/13	$1.12	$1.13	$	$	$1.03*	$ ....
55/15	.99	1.00	....	....	.87*	.82
75/20	.95	.96	....	.89	.90	.86
75/50	.97	.98	....	....	.92	....
100/26-40	.91	.92	....	.85	.86	....
120/40	.82	.83	....	.76	.77	....
150/40	.74	.75	.74	.69	.70	....
200/52	.70	.71	....	.66	.67	....
240/80	.68	....	....	.64	....	....
300/80	.66	.67	....	.62	.63	....
450/120	.66	.67	....	.62	.63	....
600/160	.65	.66	....	....	....	....
900/80-240	.63	.64	....	....	....	....

* Tricot beams only. This item with Permachem—$.05 additional.
3T/10 electrical finish available at no premium.

3 to 5 turns on Cones or Beams	$.02 Additional
Over 5 turns—55 denier	$.06 Additional per Turn
Over 5 turns—75 denier	$.04 Additional per Turn
Over 5 turns—100 denier	$.03 Additional per Turn
Over 5 turns—150 denier & coarser	$.02 Additional per Turn
150 Denier 12-TM Tubes	$.73
3 Pound Cheeses	$.01 Less than 4-lb. Cheeses
2-BU and 4-BU Tubes	Same price at 4 & 6-lb. cones
Premium for Serving Tubes	$.05
Part Cone Premiums: 2-lbs.	$.05
1-lb.	$.10
Under 1-lb.	$.20

Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.37	$1.38	$1.31	$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
*150/40	1.11	1.12	1.06	1.07
200/104	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/240	.94	....	....	....

* 150/2Z/40 available in all colors. Contact our District Sales Representative for current availability of colors in other denier.

Over 5 turns—55 denier	$.06 Additional per Turn
Over 5 turns—75 denier	$.04 Additional per Turn
Over 5 turns—100 denier	$.03 Additional per Turn
Over 5 turns—150 denier & coarser	$.02 Additional per Turn

Celaperm Black Yarn Prices

Effective March 22, 1960

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.17	$1.18	$1.11	$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	....	....
900/80	.74	....	....	....

3 to 5 turns on Cones or Beams	$.02 Additional
Over 5 turns—55 denier	$.06 Additional per Turn
Over 5 turns—75 denier	$.04 Additional per Turn
Over 5 turns—100 denier	$.03 Additional per Turn
Over 5 turns—150 denier & coarser	$.02 Additional per Turn

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.
Prices subjet to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices

"Acele"* Acetate
Bright and Dull

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	4 & 6 Lb. Tw. Tbs.	Cones	Beams
45-13	$.94	$1.02						$1.00
55-18	.82	.86						1.00
55-24	.82	.86						
75-24	.86	.89		$.90			.95	.96
75-50				.92				.98
100-32	.82	.85	$.85	.86		$.89	.91	.92
120-50	.73	.76		.77			.82	.83
150-40	.66	.60	.69	.70			.74	.75
200-60	.65		.66				.70	
240-80		.65	.65				.69	
300-80	.60	.62	.62	.63			.66	
450-120	.61		.62				.66	
600-160					$.65		.65	
900-44					.63***			
900-240	.61**						.63	
1800-88					.61***			.62***
2700-132					.61***			
3000-210					.61			

1800 Type 20 only.
(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.
** Bright only 2" Tubes.
*** Type 20 only.

Color-Sealed

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist Cones	Beams
75-24	$1.18	$1.28		$1.29	$1.34	$1.35
100-32	1.14			1.23	1.28	1.29
150-40	1.03	1.06	$1.06	1.07	1.11	1.12
300-80		.97			1.01	1.02

Black

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 4 & 6 Lb. Tw. Tbs.	Cones	Beams
75-24	$.98	$1.08		$1.09		$1.14	$1.15
100-32	.94			1.03	$1.06	1.08	1.09
150-40	.83	.86	$.86	.87		.91	.92
300-80	.75	.77				.81	
900-44					.74*	.74	

* 2 & 4 lb. ⅝" tbs. is same price as 4 & 6 Tw. Tbs.

Specialty Yarns
Cycloset for Tricot

	Tubes	Beams
40-13 Natural	$1.07	$1.14
55-18/24 Natural	.83	.87
75-24 Natural	.87	.90
100-32 Natural	.83	.86
40-13 Black	1.22	1.29
55-18 Black	1.08	1.12

Terms: Net 30 days. Subject to change without notice.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.
* Dupont's Trademark for its acetate yarn.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.
Current

"Estron"* Yarn, Bright and Dull — White

Denier & Filament	Regular Twist Cones	Beams	Intermediate Twist Cones	Beams	Low Twist Cones	Beams	Zero Twist Tubes	Tricot Beams Spun Twist	Zero Twist
55/13	$1.01	$1.02	$0.99	$1.00	$0.93	$0.94	$0.82	$0.87	$0.86
75/19	.97	.98	.95	.96	.89	.90	....	.90	....
75/49	.99	1.00	.97	.98	....	....	....	....	....
100/25	.93	.94	.91	.92	.85	.86	....	....	....
120/30	.84	.85	.82	.83	.76	.77	....	....	....
150/38	.76	.77	.74	.75	.69	.70	.66	....	....
200/50	.72	.73	.70	.71	.66	.67	....	....	....
300/75	.68	.69	.66	.67	.62	.63	.60	....	....
450/114	.68	.69	.66	.67	.62	.63	....	....	....
600/156	.67	.68	.65	.66	.62	.63	....	....	....
900/230	.65	.66	.63	.64	....	....	.61	....	....
Heavier	....	....	....	....	....	....	.56	....	....

TEXTILE NEWS BRIEFS

New Talcott Affiliate

James Talcott, Inc., has formed a new affiliate, Talcott Inter American Corp., through the purchase for cash of 50% of the outstanding stock of National Credit Corp., Puerto Rico's first commercial and industrial financing company, and its affiliate, Inter American Finance Corp.

The commercial financing and factoring organization also has appointed Paul H. Augspach as the firm's correspondent in Alabama. Mr. Augspach is president of Southern Investment Services, Inc., Birmingham, Ala.

Visual Presentation Award

Beaunit Textiles has received the eighth annual award for the best point-of-purchase motion picture short. The award was presented by the National Visual Presentation Association, for the four-minute film created to tell the story of Beaunit's new polyester fiber, Vycron.

Polyolefin Resin

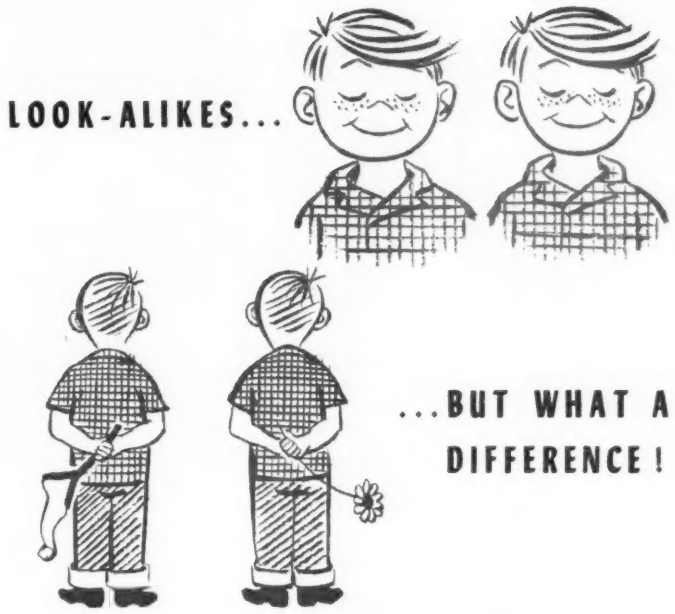
A comprehensive review of U.S. patents in the polyolefin resin process field is contained in the 240-page book, priced at $6.50 a copy, published by the Book Division, Gulf Publishing Co., Houston, Texas. The book, "Polyolefin Resin Processes," contains the U.S. patents listed in order of application. Solid (rather than liquid or viscous) polymers and concentrates on resins, homopolymers of aliphatic mono-olefins and some copolymers of olefins with other olefinic hydrocarbons, are covered in the book. Copies may be ordered from the publisher, P. O. Box 2608, Houston 1, Texas.

New Machinery Plant

Southern Machinery Co. is scheduled to complete its new 30,000-square foot plant near Greer, S. C., in early October. The new building will house manufacturing as well as administrative and clerical offices, and the company's Research and Develompent Division. Somaco manufactures the Hunt Let-Off, the Bild-O-Matic, and the Smoothee, all textile machinery items.

Business Problems!

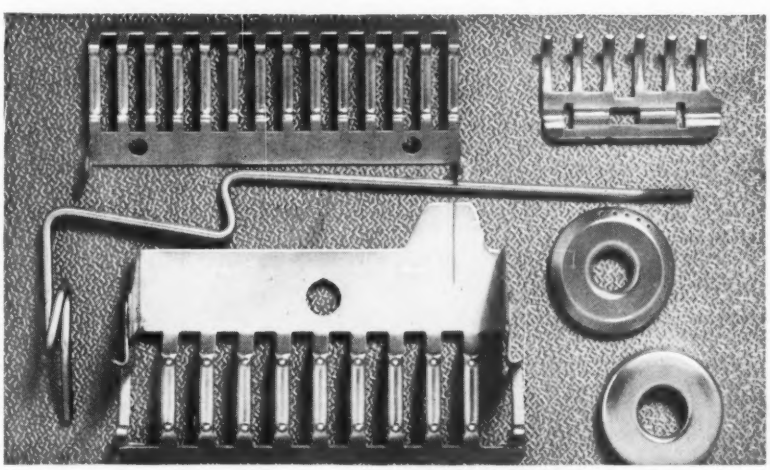
Dun & Bradstreet, Inc., has published a new booklet, "Profitable Management for Main Street," which deals with a variety of business problems through selected case histories. *For free single copies write the editors.*



The fact that all Hard Chromium Plating looks the same may mislead you.

During 26 years of successful experience, we have proven many times to our customers (Some of whom have been with us for 20 years or more) that our fast, efficient service and "know how" mean "dollars in their pockets."

Why go through the trial and error method when we are experts in our chosen field . . . top quality Hard Chromium Plating.



The leading name in textile HARD CHROMIUM PLATING, both satin and polished finish.

Walhard

WALTON and LONSBURY

79 NORTH AVENUE ATTLEBORO, MASSACHUSETTS

Current

"Chromspun"*—Standard Colors (Except Black)

Denier & Filament	Regular Twist Cones	Regular Twist Beams	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams
55/13	$1.34	$1.35	$1.32	$1.33	$1.26	$1.27
75/19	1.31	1.32	1.29	1.30	1.23	1.24
100/25	1.25	1.26	1.23	1.24	1.17	1.18
150/38	....	....	1.06	1.07	1.01	1.02
300/75	....	....	.96	.97	.92	.83
450/114	....	....	.94	.95	.90	.91
900/230	....	....	.89	.90	....	....

Current Prices

"Chromspun"*—Black

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Beams
55/13	$1.19	$1.17	$1.18	$1.12
75/19	1.16	1.14	1.15	1.09
100/25	1.10	1.06	1.09	1.03
150/38	.93	.91	.92	.87
200/50	.87	.85	.86	.82
300/75	.83	.81	.82	.78
450/114	.81	.79	.80	.76
900/230	.76	.74	.75	....

Prices are subject to change without notice.
Prices on special items quoted on request.
Terms: Net 30 days. Payment—U. S. A. dollars.
Transportation charges prepaid or allowed to destination in continental United States except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.
* "Estron" is a trade-mark of the Eastman Kodak Company.
* Chromspun is a trade-mark of the Eastman Kodak Company.

RAYON

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

Den/Fil	No Twist Skeins	Twisted Skeins & Cones	8½ Turns	High Twist Skeins & Cones 12 Turns	15 Turns	18 Turns
40/30	$1.49	$1.95	....	....	....	$2.08
50/36	1.29	1.55	....	....	....	1.85
65/45	1.22	1.38	....	$1.61	....	1.66
75/60**	1.11	1.25	....	1.48	$1.53	1.56
100/74**	1.02	1.15	....	1.40	1.45	1.51
125/90	1.01	1.12	$1.16	1.37	....	....
150/120	.99	1.08	1.18	1.33	....	....
300/225	....	1.01	....	....	1.14	....
900/744	....	.91	....	....	....	....
1800/744	....	.91	....	....	....	....

* Includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.
** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"4" HH Spool Spun Yarn

Den/Fil	No Twist Tubes	No Twist Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Cones	15 Turn Cones
40/30	$1.35	$1.35	....	....	....	....	....
50/36	1.05	1.05	....	....	....	....	....
65/45	1.13	....	....	....	....	$1.50	....
75/45*	1.04	....	$1.15	$1.15	$1.38	1.38	$1.46
100/60*	.96	....	1.10	1.10	1.30	1.30	1.38
125/60	.91	....	1.06	1.06	....	....	....
150/90*	.83	....	.87	.87	1.21	1.21	1.30
150/120	.87	....	....	.99	....	....	....

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

"44" HH "Parfe" Spool Spun Yarn

Den/Fil	No Twist Cones	5 Turn Cones	5 Turn Beams	12 Turn Cones	15 Turn Cones
50/36	$1.60	$1.85	$1.85	....	....
75/45	1.48	1.58	1.58	$1.78	$1.88
100/60	1.38	1.48	1.48	1.68	1.78
150/90	1.21	1.28	1.28	1.63	1.73
300/120	1.21	1.28	....	....	....

Nub-Lite (Short Nubbi)

Code	Den/Fil	2½ Turn Natural Cones	2½ Turn Cones*	5 Turn Natural Cones	5 Turn Cones*
1515	160/90	....	....	$1.50	$1.40
1519**	155/90	....	....	1.50	1.40
2008***	200/120	....	....	1.11	1.01
3002	315/180	$1.15	$1.05	....	....
4011	410/224	1.15	1.05	....	....
6001	600/360	1.13	1.03	....	....
8001	860/450	1.13	1.03	....	....

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.
** Code 1519 can be run in warp or filling.
*** Available in 10 turns at 5¢ extra per pound.

CUPIONI Type B

Code	Den/Fil	2½ Turn Cones
9650	70/45	$1.69
9660	100/60	1.53
1545	150/90	1.35
9730	285/135	1.15
9792	450/225	1.15
9819	600/372	1.12
9837	940/372	1.02

"Spun Dyed Cupracolor is spun 150, 285, and 940 deniers at 35¢ per pound extra. Cupracolor Black comes in all deniers."

STRATA SLUB

Code	Den/Fil	Twisted Cones	Price
9747	275/225	3½ Turns	$1.25
9798	450/372	2½ Turns	1.15
9823	600/372	2½ Turns	1.10
9847	960/372	2½ Turns	1.02
9885	1290/372	1½ Turns	1.00
9934	2680/744	1½ Turns	1.00

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

FLAIKONA

Code	Den/Fil	Twisted Cones	Price
9699	150/148	2½ Turns	$1.35
9769	300/224	2½ Turns	1.25
9782	450/270	2½ Turns	1.05
9809	600/360	2½ Turns	1.05
9840	900/450	2½ Turns	1.00
9924	2000/744	2½ Turns	.95

TUSSON

Code	Den/Fil	2½ Turn Cones	3½ Turn Cones
9668	100/60	....	1.58
9678	150/90	$1.35	....
9745	285/135	1.15	....
9783	450/225	.85	....
9821	600/372	.80	....
9828	940/372	.75	....

Spun Dyed Cupracolors 30¢ extra per lb.
Available in 450 denier only.
Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice.

American Enka Corp.

Current Prices
Effective February 29, 1960
Standard Quality Yarns

NATURAL

Den./Fil.	Luster	Turns		Weaving Cones	Weaving Beams	Skeins Long	Skeins Short	Cakes	Knitting Cones
50/18	E	5	S	....	....	....	....	....	1.63
50/20	B	4	S&Z	....	....	....	....	1.52	1.64
75/10	B	3	S&Z	....	....	....	....	1.02	....
75/18	E	4	S	....	....	....	....	....	1.14
75/30	B	2.5,4	S&Z	1.14	1.14	1.32	1.41	1.02	1.14
75/30	B	8	S	1.24	....	1.49	1.59	1.12	1.24
75/45	P,E	2.5,4,5	S&Z	1.14	1.14	1.32	1.41	1.02	1.14
75/60	B,P	3,4	Z	1.16	....	....	....	1.04	....
100/14	B	3	S&Z	....	....	1.15	1.23	.90	....
100/40	B,E	12	S&Z	....	....	....	....	....	1.29
100/40	B,P,E	4,5	S&Z	.98	....	....	....	.90	.98
100/40	B	6	S	1.17	....	1.34	1.44	1.09	....
100/40	B,P	2.5,4	S&Z	.98	.98	1.15	1.23	.90	....
100/60	B	4	S&Z	....	....	....	....	.90	....
100/60	E	2.5	S	1.00	1.00	....	....	.92	....
125/40	E	3	Z	.95	.95	....	....	.87	.90
125/50	B,P	3	S	.96	.96	....	....	....	....
150/40	B,E	0		.745	....	....	....	....	....
150/40	B,P,E	2.1,3	S&Z	.82	.82	.96	1.03	.78	.82
150/40	B,E	5	S&Z	.90	.90	1.15	1.25	.86	....
150/40	B,E	8	S&Z	.95	.95	1.20	1.30	.91	....
150/60	B	3.0	S	.82	.82	....	....	....	....
150/90	E	2.1	S&Z	.83	.83	....	....	.79	....
200/40	B	2.1	S	.81	.81	.94	1.01	.77	....
200/40	P	3	Z	....	....	.94	1.01	.77	.81
250/60	P,E	2.4	Z	....	....	.93	1.00	.77	.80
300/30	E	3	S	.81	.85	....	....	....	....
300/40	B	3.2	Z	.73	.73	....	....	....	....
300/50	B,E	3	S	.73	.76	....	....	....	....
300/60, 120	B,P,E	2.1	S&Z	.73	.73	.82	.89	.71	.73
300/60	B	3.5	S	.73	.73	.82	.89	.71	....
300/60	B	6	S	.86	.86	....	1.00	.84	....
300/120H.T.	B	2.5	S	.75	.75	....	....	.73	....
450/60	B	3	S	.69	.71	....	....	.67	....
450/80	B,E	3	S	.69	.71	.78	.85	.67	....
600/80	B,E	3	S	.73	.75	....	....	....	....
600/120	B,E	3	S	.69	.71	.78	.85	.67	....
900/50	B	3	S	.69	.71	....	....	.67	....
900/120	B	3.4	S	.69	.71	.78	.85	.67	....
900/120H.T.	B	3.4	S	71	.71	....	....	.69	....

B = Briglo E = Englo (Dull)
P = Periglo (Semi-Dull) H.T. = High Tenacity

Jetspun® (Colored Yarns)

Den./Fil.	Tenacity	Turns	Weaving Cones	Weaving Beams	Colors
100/40	Regular	2.5S	$1.35	$1.35	All
150/40	Regular	2.1S	1.17	1.17	All
200/40	Regular	8.0S	1.28	1.28	All
300/120	Regular	2.1S	1.09	1.09	All
450/80	Regular	3.0S	1.05	1.05	All
600/80	Regular	3.4S	1.04	1.04	All
300/40	High	3.4S	1.11	1.11	All
900/120	High	3.4S	1.06	1.06	All

® Registered Trade Mark for American Enka Solution-dyed Rayon Yarn.

Skyloft® (Lofted Rayon Filament Yarns) Natural and Jetspun®

Denier	Denier per Filament	Twist	Cones or Tubes Natural	Cones or Tubes Black	Other Colors
5300	15	3.0S&Z	$.65	$.75	$.82

Registered Trademark for American Enka Texturized yarn.

American Viscose Corp.

Effective October 13, 1959

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	Cones Tubes	Beams Spools	Cakes
			Regular Turns				
75	10-30	Bright	$1.41	$1.32	$1.14	$1.14	$1.02
75	30	Dull	....	....	1.14	1.14	1.02
100	14-40	Bright	1.23	1.15	.98	.98	.90

Severance in New Post

The Association of Cotton Textile Merchants of New York has elected John L. Severance as executive vice president, effective September 1 with the retirement of W. Ray Bell, president since 1934. Severance also was appointed as the association's representative to the General Arbitration Council of the textile industry.

Edward F. Vandervoort, association assistant treasurer, has been named a trustee of the Association of Cotton Textile Merchants Disability Insurance Trust.

Draper Enters Packaging

Draper Corp. will enter the packaging field, according to Thomas H. West, president. Draper intends to acquire Pak-All Products in Providence, R.I., for an undisclosed amount of Draper stock. "Rapid expansion" of Pak-All, a printer and converter of plastic film, is planned by Draper. West also reported that operations of Draper's recently acquired Burns subsidiary, manufacturer of rotary garden tillers, has been expanded to include the sales of Draper's saw chain and guide bars.

Tank Safety Practices

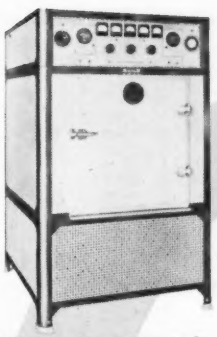
The Manufacturing Chemists' Association, Inc., has issued an 8-page pamphlet (SG-10) on recommended practices and procedures for entering tanks and other enclosed spaces in a safe manner. The publication is the 10th in the association's Safety Guide series. *For free copies of SG-10 write the editors.*

Putnam Relocating

Putnam Chemical Corp. is moving its main office to Charlotte, N.C., from Beacon, N.Y. Key personnel has been reassigned to Charlotte, with temporary offices set up at 1229 West Morehead Street, pending completion of offices, laboratories and plant facilities later this year.

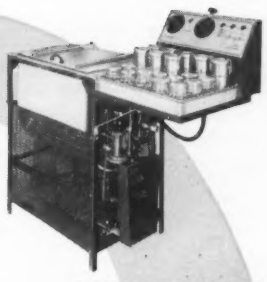
Rayon Plant Sold

American Viscose Corp. has sold its Roanoke, Va., plant to a group of investors in Roanoke and Philadelphia, Pa. The 1,600,000 square feet plant had manufactured rayon yarns. Declared surplus by management last year, its operations were shifted to other American Viscose plants. The Roanoke Valley Industrial Development Corp. is participating in the new ownership of the plant and expects to be instrumental in offering portions of the property for rent or resale to industrial users.



WEATHER-OMETER®
Reduces years of the deteriorating effects of outdoor exposure to sunlight, rain and thermal shock to a short laboratory test. Priced $2735.00 up.

FADE-OMETER®
Simulates exposure to Sunlight with controlled humidity in alternate cycles of light and dark, producing a quick accurate test of fading qualities. Price $1350.00 up.



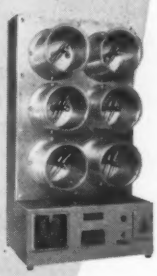
LAUNDER-OMETER®
The standard test machine of the A.A.T.C.C. for determining the color fastness, shrinking, washing and dry cleaning qualities of textiles. Price $875.00.

Atlas-Ometers

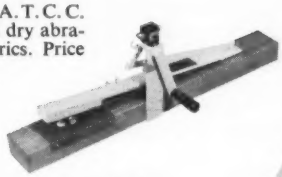
Used all over the world for accelerated testing of textiles and dyestuffs, for colorfastness and wearing characteristics due to light, washing, weathering, abrasion, perspiration, etc. Required in many A.A.T.C.C. and A.S.T.M. test programs and Government specifications.

ATLAS ELECTRIC DEVICES CO.
4114 N. Ravenswood Ave.
Chicago 13, Illinois, U.S.A.

ACCELEROTOR®
Developed by the A.A.T.C.C. for evaluating wet and dry abrasion resistance of fabrics. Price $485.00.

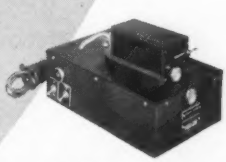


RANDOM TUMBLE PILLING TESTER
For the fast determining of the pilling and fuzzing characteristics of all types of fabrics. Price $485.00 to $890.00.

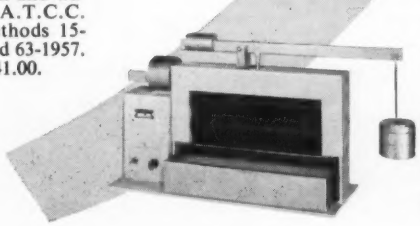


A.A.T.C.C. CROCKMETER
For determination of color fastness to crocking. $42.50 to $55.00.

PERSPIRATION TESTER
For testing color fastness to perspiration and water. A.A.T.C.C. test methods 15-1960 and 63-1957. Price $41.00.



SCORCH TESTER
Standard A.A.T.C.C. tester for damage caused by retained chlorine in fabrics. Price $230.00.



LABORATORY WRINGER and PADDER
For extracting controlled amounts of liquids to produce test specimens as required by many textile test programs. $255.00.

100	60	Dull	....	....	1.00	1.00	.92
150	24-40	Bright	1.03	.96	.82	.82	.78
150	40	Semi-Dull	1.03	.96	.82	.82	.78
150	40	Dull	....	....	.82	.82	.78
150	90	Dull	....	....	.83	....	.79
200	10-44	Bright	1.01	.94	.81	.81	.77
250	60	Semi-Dull & Dull	1.00	.93	.80	.80	.77
300	15	Bright	....	.85	.78	.78	....
300	30	Dull Flat Filament	....	....	....	.85	....
300	44	Bright & Dull	.89	.82	.73	.73	.71
300	234	Dull	....	....	.83	....	.81
450	60-100	Bright	....	.78	.69	.71	.67
600	100	Bright & Dull	....	.78	.69	.71	.67
900	50-100-150	Bright	....	.78	.69	.71	.67
1200	75	Bright	....	.78	.69	.71	....
2700	150	Bright	....	.78	.69	.71	....

Extra Turns Per Inch

150	40	Bright	6-Turns	$1.25	$1.15	$ .90	$ .90	$ .88
200	44	Bright	6-Turns	....	1.05	.96	.96	....
300	15	Bright	5-Turns	....	....	.86	.86	....
300	44	Bright	4.3-Turns	....	....	.81	....	.79
300	44	Bright	6-Turns	.97	.90	.86	.86	.84
300	120	Rayflex	6-Turns	....	....	.93	.93	....
600	30	Bright	5-Turns	....	.86	.82	.82	.80

Rayflex Yarns

150	40-60	Rayflex	$	$	$ .85	$ .85	$ .81
200	75	Rayflex	....	....	.84	.84	.80
300	60-120	Rayflex	....	....	.75	.75	.73
450	120	Rayflex	....	....	.71	.71	.69
600	234	Rayflex	....	....	.71	.71	.69
900	350	Rayflex	....	.80	.71	.71	.69

Spun Dyed Yarns

Denier	Type	Cones/Tubes Beams/Spools
75	Regular Strength	$1.71
100	Regular Strength	1.35
150	Regular Strength	1.17
200	Regular Strength	1.14
300	Regular Strength	1.09
450	Regular Strength	1.05
600	Regular Strength	1.05
900	Regular Strength	1.05
300	High Strength	1.11
450	High Strength	1.06
900	High Strength	1.06

Avicron Yarns

Avicron Yarns

Denier	Filament		Cones/Tubes Beams/Spools
1800	100-200	Singles & 2 Ply	$.61
2700	150-300-980	Singles & 2 Ply	.58
2700	980	Singles 5 TPI	.61

Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams		$170.00 each
Metal Section Beam Racks		75.00 each
Metal Tricot Spools—14" flange		30.00 each
	21" flange	60.00 each
	32" flange	150.00 each
Metal Tricot Spool Racks	14" flange	135.00 each
	21" flange	100.00 each
	32" flange	75.00 each
Wooden Tricot Spool Crates		20.00 each
Cloth Cake Covers		.05 each

Same to be credited upon return in good condition—freight collect.

Celanese Fibers Company

Effective October 12, 1960

Viscose Rayon Filament Yarn Prices—Bright and Dull

Denier/Fil/Twist		Beams	Cones	Cakes
75/30/2Z		$1.11		
75/30/3		1.11	$1.10	$.98
100/40/2Z		.97		
100/40/3		.97	.96	.88
100/40/5			1.02	.95
100/60/2Z	NS	.97	.96	
100/60/3			.98	.90
125/40/2Z		.95		
125/40/3		.95	.94	.87
150/40/0	NS		.74½	
150/40/2Z		.81		
150/40/3		.81	.79½	.76
150/40/5			.90	.86
150/40/8			.95	.91
150/40/10			.98	.94
150/90/0	NS		.77½	
250/60/0	NS		.74	
250/60/3			.80	.77
300/50/0	NS		.70	
300/50/2Z		.72		
300/50/3		.72	.70½	.69
450/60/0	NS	.68	.67	
450/60/3		.70	.69	

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U. S. A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Effective May 11, 1961

Bright and Dull

Den.	Fil.	Turns/Inch Up to		Cones (A) Beams	Cones (A) Tubes	Cakes
40	20	3	Textile "Cordura"*		$1.97	$1.92
50	20	3	Textile "Cordura"		1.72	1.67
50	35	3	Textile "Cordura"		1.77	
75	30	3		$1.14	1.14	1.02
100	40	3	Bright	.98	.98	.90
100	60	3	Dull		1.00	.92
125	50	3		.96	.96	.87
150	40	3		.82	.82	.78
150	60	3	Bright	.82	.82	.78
150	60	3	Textile "Cordura"		.875	.845
150	90	3	Dull		.83	
150	100	3	Dull		.83	
300	50	2.5		.73	.73	.71
300	120	3	Textile "Cordura"	.74	.74	.72
450	72	3		.71	.69	.67
600	96	3	Bright	.71	.69	.67
600	240	3	Textile "Cordura"	.72	.70	
900	50	3	Bright	.71	.69	.67
900	144	3	Bright	.71	.69	.67
2700	150	3	Bright	.71	.69	

Thick and Thin

200	80	3	#7 Bright		1.08	
450	100	3	#7 Bright		.92	
1100	240	3	#60 Bright		1.03	
2200	480	3	#60 Bright		.98	

(A) 2¢/lb. additional for cones less than 3#.

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "CORDURA" and "SUPER CORDURA" are Du Pont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Co.,—Div. of Midland-Ross

Effective June 15, 1961

Continuous Process Textile Yarns

Denier	Filament	Turns per In.	Type	Beams	2.8# Cones	4.4# Cones and Tubes
150	40	2.5"S"	Dull	.82	.82	
150	40	2.5"S"	Bright	.82	.82	
200	20	2.5"S"	Bright	.81	.81	
300	44	2.5"S"	Bright	.73	.73	
450	60	2.0"S"	Bright	.69		.69
600	90	1.5"S"	Bright	.69		.69
900	50	2.0"S"	Bright	.69		.69
900	150	2.0"S"	Bright	.69		.69
1100	480	2.0"Z"	Bright-extra strong	.66		.66

Lustre #4 is semi-dull.

Prices are subject to change without notice.

Strawn Monofilament

Denier	Filament	Turns per In.	Type	4.4# Cones	Spools and Tubes
450	1	0	Bright and Dull	1.00	1.05
1250	1	0	Bright and Dull	1.00	1.05

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points in continental United States except Alaska.

Prices are subject to change without notice.

North American Rayon Corp.

Current Prices

Denier/Filament Normal Strength Yarns — NARCO	Twist	Knitting* Cones	No Twist Knitting Cones	Weaving Cones, Velvet Cones, Beams, Tubes**	Untreated Cakes
75/30	3.5			1.14	1.02
75/30	7			1.27	
75/30	12			1.35	
75/30	15			1.37	
75/30	20			1.40	
100/40/60	3.5			.98	.90
100/40	12			1.22	
125/25/60	3			.96	.87
125/52	10			1.13	
150/42	0		.74½		
150/42/60	3	.80½		.82	.78
300/75	0		.71		
300/75	3	.73		.73	.71
900/46	2.5	.69		.69	
1800/92	2.5	.69		.69	

* Oiled Cones $.01 per pound extra for Graded Yarns only.

** 1 lb. Tubes $.02 per pound extra for Graded Yarns only.

"Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

Elevator Carpet Test

Key elevators of the Empire State Building in New York City—carrying up to 6,000 people every day—are doubling as a testing ground for some of the newest carpet material. The test was devised by the Du Pont Co. to determine the cost savings which could result by substituting carpets for hard surface material as an elevator floor covering. Three carpet constructions are involved in the test, with the most vigorous exposure being given to Du Pont 501 carpet nylon. Carpets of an alternate construction of 501 carpet nylon and a contract grade of Orlon acrylic fiber blended with wool are also sharing in the test.

Clemson Stresses Chemistry

A master plan for textile education at Clemson College to attract a larger cross-section of "our finest youth" has been announced. Dr. Robert C. Edwards, Clemson president, said, "We visualize our textile chemistry curriculum becoming much more closely allied to our basic chemistry program. One cannot be a good textile chemist until he has first mastered basic chemistry, including the newer science of physical chemistry."

Foxboro Electronic Plant

The Foxboro Co. has opened a $700,000 electronic assembly plant at East Bridgewater, Mass. The new, 40,000-square foot plant will manufacture and assemble electronic control instruments which are specified for process control systems.

Fashion Booklet Available

The International Ladies' Garment Workers' Union has published "Your Dream Wardrobe," its seventh fashion booklet in a series on better dressing. The new booklet is particularly aimed at girls in their teens. *For free copies write the editors.*

Vy-Metal Adhesives

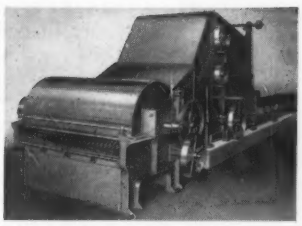
A new line of adhesives for vinyl-to-metal laminations has been introduced by National Starch and Chemical Corp. Tradenamed Vy-Metal Adhesives, the group bonds vinyl films that simulate leather, textiles, wood grains and marble to steel, aluminum and magnesium metals. The line includes four types: a curing adhesive with heat resistance and hardness that can be controlled by varying curing time and temperature; a simple-to-use thermoplastic adhesive; a heat resistant adhesive for very deep draws, and a thermosetting adhesive. *For further information write the editors.*

Since 1852

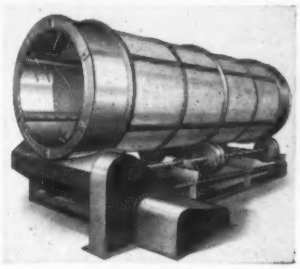
FIBRE PROCESSING MACHINERY by SARGENT

From Bale Opener through Dryer, Sargent's modern fibre processing system gives you completely automatic continuous production . . . an uninterrupted straight-line flow of quality-protected fibres at an economy you cannot afford to overlook. Let us tell you more.

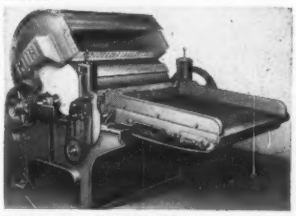
FEEDERS • OPENERS • PICKERS • BLENDERS
WASHERS • DRYERS • TOP & YARN HANDLING
AND SPECIAL PURPOSE MACHINERY



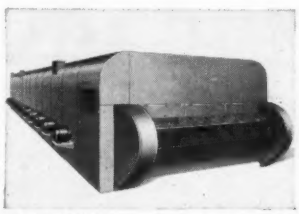
BALE OPENER AND PICKER
Continuous opening, picking and feeding, cotton linters or staple. Excellent on machine-picked cotton.



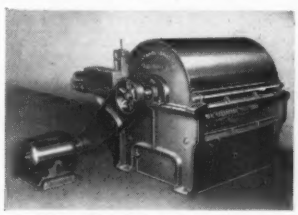
SQUIRREL CAGE DUSTER
Continuous dusting of heavy grease wools, waste, rags. Also very efficient blender.



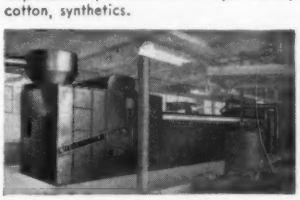
WET AND DRY PICKER
Highly versatile—for fibres after bleaching, after dyeing. Works equally well with wet or dry fibres.



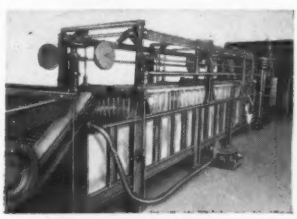
STOCK DRYER
Leads all dryers for performance and dependability on scoured or dyed wools, cotton, synthetics.



MIXING PICKER
For continuous blending—all fibres.



FIBRE PROCESSING SYSTEM
Section of recent installation showing high economy, complete dependability. Fibres are not handled from opening to drying.



STAINLESS STEEL WASHER
For scouring, bleaching, acidifying.

C. G. SARGENT'S SONS CORPORATION
Graniteville, SINCE 1852 Massachusetts

PHILADELPHIA • CINCINNATI • ATLANTA • CHARLOTTE • HOUSTON • CHICAGO • DETROIT • TORONTO

TRIACETATE

Celanese Fibers Company

Current Prices — Arnel Yarn Prices

Bright & Dull

Effective August 11, 1961

Denier and Filaments	Cones	Beams	Thick and Thin Cones
55/LTDZ/15	$	$1.25	$ ....
55/2Z/15	1.32	1.33	....
75/LTDZ/20	....	1.21	....
75/2Z/20	1.26	1.27	....
100/2Z/26	1.14	1.15	....
150/2Z/40	.95	.96	....
200/2Z/40	....	....	....
200/2Z/52	.92	.93	1.25
300/2Z/80	.87	.88	1.23
450/2Z/120	.86	.87	....
600/2Z/160	.85	.86	1.21

3 to 5 Turns on Cones or Beams—$.02 Additional
Premium for Black Arnel—$.25 Per Pound
Premium for Navy Arnel—$.37 Per Pound

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

CELLULOSIC HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective February 6, 1961

Industrial Yarn Prices

Prices Subject To Change Without Notice

	Denier/ Filament	Twist	Standard Quality Beams	Cones
TYREX (ENKA—5000)	1100/720	Z	.57	.595
	1650/1100	Z	.51	.535
	2200/1440	Z	.48	50.5
	3300/2160	Z	.48	50.5
TYREX FABRIC (ENKA—5000)	1100/720	Z	.69	
	1650/1100	Z	.60	
	2200/1440	Z	.57	
	3300/2160	Z	.57	
SUPRENKA M UNSLASHED Super High Tenacity Yarn	1230/720	Z	.57	.595
	1600/1100	Z	.53	.555
	1800/1100	Z	.51	.535
	1870/1100	Z	.51	.535
	2200/1440	Z	.48	50.5
	2400/1440	Z	.48	50.5
	3650/2160	Z	.48	50.5
SUPRENKA MS SLASHED Super High Tenacity Yarn	1100/720	Z	.57	.595
	1650/1100	Z	.51	.535
	2200/1440	Z	.48	50.5
	2200/1440	(5.5Z)	.505	.53
	3300/2160	Z	.48	50.3
SUPRENKA 2000 High Tenacity Yarn	1100/480		.56	.585
	1230/480		.56	.585
	1650/720	O-Z	.50	.525
	1820/720		.50	.525
	2200/960	O-Z	.47	49.5
	2400/960		.47	49.5
	3300/2160		.47	49.5
CHAFER YARN	1130/480	(5Z)	.60	.60
SEWING YARN	1230/480	Z		.65
	1750/720	Z		.55
	1820/720	Z		.54
SUPRENKA H MOD.	1100/1100	Z	.67	.67
SUPER HIGH TENACITY—DIMENSIONALLY STAPLE YARN	1650/1644	Z	.61	.61
	2200/2160	Z	.58	.58

American Viscose Corp.

Effective February 9, 1961

Tyrex*

Tyrex* Rayon Tire Yarn

Denier	Filament	Twist	Beams	Cones
1100	980	O	.57	.595
1100	980	Z	.57	....
1650	1500	O	.51	.535
1650	1500	Z	.51	....
2200	1500	O	.48	.505
3300	3000	O	.48	.505

Tyrex* Rayon Tire Fabric

Denier	Filament	Carcass	Top Ply	Breaker
1100	980/2	.69	.69	.69
		Factor Open-525	300-490	115-272
1650	1500/2	.60	.61	.635

Factor—determined by dividing total ends by picks.

* Tyrex—Trademark of Tyrex Inc.

Rayon Tire Yarn

Yarn

High Strength

Denier	Filament	Twist	Unslashed Beams	Unslashed Cones	Slashed Beams	Slashed Cones
1100	490	O	....	....	.56	.585
1150	490	Z	.56	.585	....	....
1650	980	Z	.50	.525	....	....
1650	980	O	....	....	.50	.525
1875	980	Z	.50	.525	....	....
2200	980	O	....	....	.47	.495

Super "Rayflex"

Type 120						
1800	1500	O	....	.535	....	....
4400	3000	O	....	....	.48	.505

Chafer Yarn

1100/490 High Strength 5Z Twist	.60	.60

Adhesive Dipped Yarn or Cord

.06 PREMIUM

Cord on cones in regular Tire Yarn twists same as fabric prices.

Other twist combinations—prices quoted on request.

Special packages take premiums indicated:

4.0 oz. Wardwell Tubes	.20
10.5 oz. Wardwell Tubes	.10
1.5 lb. Regular Braider Tubes	.06
3.5 lb. Tubes	.045

Single Yarn—Based on cone price.

Plied Yarn—Based on fabric price.

All yarns sold "Not guaranteed for dyeing"

The following deposit charges are made on invoices:

Beams	$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition freight collect.

Rayon Tire Yarn and Fabric

Terms: Net 30 days. Seller to select and to pay transportation charges of common and contract carrier except when shipment moves West of the Mississippi River, in which event the actual cost of transportation to the Mississippi River crossing based on the lowest published freight rate, shall be allowed. Title to pass when merchandise is delivered to consignee. Transportation allowance based on lowest published volume rate shall be granted if merchandise is transported from shipping point in vehicle owned or leased and operated by buyer and title to pass when merchandise is delivered to same.

Price subject to change without notice.

Inferior Yarns—Designated HS-SR	.06 Below First Quality Price
Skein Yarn	.04 Above First Quality Price
Adding 6 Turns to "O" Twist Yarn	.05

"Avisco" Industrial Sewing Thread

Effective March 1, 1961

Denier	Filament	Description	Twist	Package	Price
1100	980	Super "Rayflex" 120	O	9 lb. cone	.64
1100	980	Super "Rayflex" 120	2Z	4 lb. cone	.64
1500	980	Super "Rayflex" 120	O	9 lb. cone	.59
1500	980	Super "Rayflex" 120	2Z	4 lb. cone	.59
1780	1500	Super "Rayflex" 120	O	9 lb. cone	.55
1780	1500	Super "Rayflex" 120	2Z	4 lb. cone	.55

Domestic freight prepaid.

Prices subject to change without notice.

Celanese Fibers Company

Effective December 27, 1955

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	$3.00 lb.	$3.35 lb
60/2.5/80	4 " "	2.40 "	2.75 "
90/2.5/120	4 " "	2.25 "	2.60 "
120/2.5/160	4 " "	2.05 "	2.40 "
150/2.5/180	4 " "	1.95 "	2.30 "
270/2.5/360	4 " "	1.85 "	2.20 "
300/2.5/360	4 " "	1.85 "	2.20 "

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices — Effective May 11, 1961

"Super Cordura"*

Den Fil	Turns/in	Beams	Cones
1100-720	2	.57	.595
1200-720	2		.595
1600-960	2		.555
1650-1100	2	.51	.535
1800-1100	2	.51	.535
2200-1440	2	.48	.505
2400-1440	2	.48	.505

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Co.,—Div. of Midland-Ross

Effective June 15, 1961

Tyron

High Tenacity Yarns and Cords for Industrial Products

Denier	Filament	Turns per Inch	Cones	Beams
1100	720	3.0 "Z"	.585	.56
1150	720	3.0 "Z"	.585	.56
1650	1100	3.0 "Z"	.525	.50
1700	1100	3.0 "Z"	.525	.50
2200	1440	3.0 "Z"	.495	.47
3300	2200	3.0 "Z"	.495	.47

Treated yarns and cords for mechanical rubber goods—plus $.06.

Prices for special put-ups quoted on request.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points in the continental United States except Alaska.

Tyrex*

Tyrex* Rayon Tire Yarn

Denier	Filament	Twist	Cones	Beams
1100	720	Z	.595	.57
1650	1100	Z	.535	.51
2200	1440	Z	.505	.48
3300	2200	Z	.505	.48

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River.

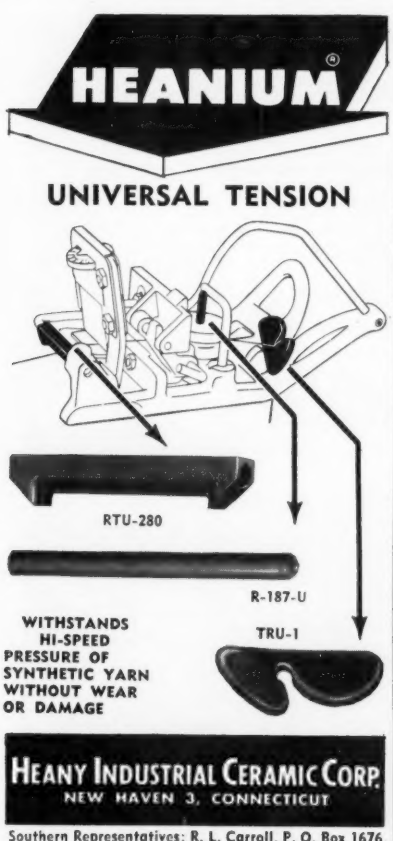
* Tyrex—Trademark of Tyrex Inc.

Chemstrand Promotions

The following changes and additions to the corporate organizational structure of The Chemstrand Corp. have been announced by Edw. A. O'Neal, Jr., president:

Fred G. Gronemeyer, named senior vice president, executive director, industrial development; Carl O. Hoyer, senior vice president-administration and control; William G. Luttge, senior vice president and assistant to the president; Arvon L. Davies, vice president, executive director, administration; Robert M. Crooks, executive director—industrial and public relations; Louis E. Dequine, executive director-nylon; Paul W. Runge, vice president, general manager, manufacturing, engineering and development; Robert E. Smith, vice president and general manager-marketing, and J. R. Crow, Jr., vice president-governmental affairs, executive services and assistant secretary of the corporation.

Joseph R. Martin has been appointed director of nylon manufacturing at the Pensacola, Fla., plant, and Robert L. Granger has been named director of nylon manufacturing at the Greenwood, S.C., plant.



Southern Representatives: R. L. Carroll, P. O. Box 1676. Greenville, S. C.

Saco-Lowell Visitors

More than 3,000 visitors connected with the textile industry have toured the customer sales demonstration department of Saco-Lowell Shops at Greenville, S.C., since the opening of the multi-million plant in 1958, the company reported.

The company also reported that nearly 3½ million S-C new era spindles are in use on spinning and twisting equipment throughout the world. Actual in-use tests of the spindles are said to have shown savings in power, oil and maintenance.

Recent orders reported received by S-L include: from Adelaide Mills, Inc., Anniston, Ala., four roving frames, model FS-2, each with 96 spindles and producing a 13½ by 7 package; and from Cleveland Mills, Lawndale, N.C., eight, 264-spindle, 4-inch gauge, SJ-3H model spinning frames, and a 4-drum S-L Fleissner dryer.

New Onyx Division

Onyx Chemical Corp. has established a new unit—the Finishes & Coatings Division—under the direction of Philip E. MacLean. He will be responsible for the promotion and sale of Onyx products to the textile, paper, leather and plastic industries, as well as related fields where surface coatings are applied.

Jordan Joins Utex

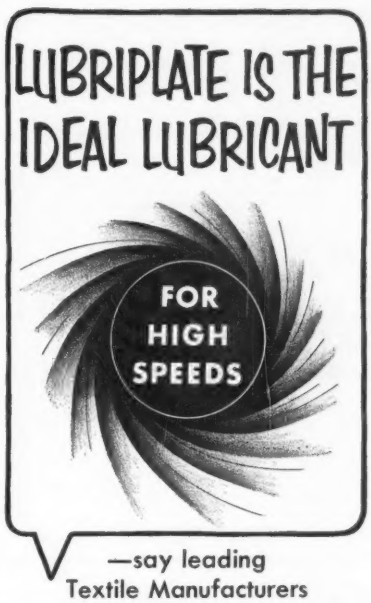
Utex, Inc., sales division of U.S. Textile Machine Co., has named E. Leland Jordan to the newly-created post of executive vice president. Mr. Jordan formerly was associated with United Merchants & Manufacturers, Inc., for 21 years.

New Laminating Firm

Herbert S. Howard, formerly vice president of A.D. Gosman Co., has formed Amerathane Industries, Inc., in Brooklyn, N.Y. The new company plans to specialize in urethane foam lamination for the textile and related fields, using the name "Foamagic" for its products.

Improved Nylon Dye

Althouse Chemical Co. is offering Supernylite Cerise BL for producing brilliant shades on nylon in the red violet range. The new bright color is also applicable for similar fashion shades on women's wear woolen and blends. The new color is dyed with the assistance of an acid salt or acetic acid. Althouse reports it has good fastness to light, while washing fastness on nylon may be increased with an after treatment of the company's Cenekol *For further information write the editors.*



LUBRIPLATE Lubricants have won acceptance in the textile industry because even with speeds up to 25,000 R.P.M., they have exceedingly long life and do not break down. LUBRIPLATE Lubricants range from the lightest oils to the heaviest greases to meet every requirement of the textile industry.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE GREASE AND FLUID TYPE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

LUBRIPLATE is available in grease and fluid densities for every purpose . . . LUBRIPLATE H. D. S. MOTOR OIL meets today's exacting requirements for gasoline and diesel engines.

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Send for free "LUBRIPLATE DATA BOOK" . . . a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

North American Rayon Corporation

Current Prices

Super Super High Strength Continuous Yarn Type 710		Cones	Beams
1100/720	1.6Z	.57	.57
1650/720/1100	2.0Z	.51	.51
Tire Cord Fabrics			
Super Super High Strength Type 710			**Rolls**
1100/720			.69
1650/720			.60

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold f.o.b. delivery point.

Prices are subject to change without notice.

CELLULOSIC STAPLE & TOW ACETATE

Celanese Fibers Company Effective March 2, 1959

Staple

(Most Deniers Available in Bright or Dull Luster)

Celanese Acetate Staple	
3, 5.5 & 8 Denier (Regular Crimp, Type HC, Type D)	$.36
2, 12 & 17 Denier (Regular Crimp, Type HC, Type D)	.37
35 Denier	.38
50 Denier	.40
Type F—5.5 & 8 Denier	.35
Type F—12 & 17 Denier	.36
Type K—(Available under Celanese License Agreement)	.39
⅝" to ⅞" length (All Deniers)	.03 (Premium)
35 Denier Flat Filament Acetate	.40
Non-Textile Acetate Fibers	.29*

Tow (Celatow)

3, 5.5 & 8 Denier	$.37
2, 12 & 17 Denier	.38
35 Denier	.40
35 Denier Flat Filament Acetate Tow	.42
50 Denier	.42

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

* No transportation allowed (F.O.B. shipping point.)

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

RAYON

American Viscose Corp. Current Prices

Rayon Staple

	Bright and Dull
Regular	$ .28
"Viscose 22"	.28
1.25 Denier	.31
All Other Deniers	.28
Hi-Crimp	.28
Bleached Crimp	
1.5, 3.0 Denier	.315
Smooth	
8.0 & 15.0 Denier Smooth	.30
22.0 Denier	32
Bleached	.33
Extra Strength	
0.75 Denier	.40
1.0 Denier	.35
XL	
1.0 Denier	.40
1.5, 3.0 Denier	.37
XLI	.34
Fiber 40	
1.0 Denier	.43
1.5 Denier	.40

Spun Dyed Black Staple

1.5, 3.0, 5.5 Denier	.35
15.0 Denier crimped	.38

Prices of other colors on request.

Tow

1.5, 3.0, 5.5 Denier	.35
9.0 Denier	.37
15.0, 20.0 Denier	.38
Color spun black tow	.42

Terms: Net 30 days.

American Enka Corp.

Current Prices Effective April 1, 1960

Rayon Staple

Regular Crimp

	Brt.	Dull
1.5 and 3 denier	$ .28	$ .28

High Crimp

3.0 denier	.28	.28
4.5 denier	.28	
6.5 denier	.28	.28
8 denier	.28	
15 denier	.38	.38

Celanese Fibers Company

Effective May 1, 1959

Rayon Tow

	Bright & Dull
1.5, 3, 5.5 D.P.F.	.35
Total denier 200,000	
8 D.P.F.	.37
Total denier 207,000	

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. East of Mississippi River. Transportation prepaid to any U.S.A. destination West of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

Courtaulds (Alabama) Inc.

Rayon Staple

	Bright	Dull
Regular Rayon Staple Fiber	$.27	$.27

Crimped Rayon Staple

High Crimped Rayon Staple Fiber	$.27	$.27

Coloray® Solution Dyed Rayon Staple

Color	Price per lb.
Black	$.35
Oyster	$.36
Silver Grey	$.41
Mocha	$.41
Tan	$.41
Medium Brown	$.41
Pumpkin	$.41
Aqua	$.42
Rose	$.42
Dawn Pink	$.42
Ecru	$.42
Dark Brown	$.42
Gold	$.45
Lilac	$.45
Slate Grey	$.45
Sulphur	$.46
Nugget	$.46
Light Blue	$.46
Crystal Blue	$.47
Apple Green	$.47
Sage	$.47
Peacock Blue	$.48
Medium Blue	$.50
Indian Yellow	$.51
Dark Blue	$.51
Hunter Green	$.51
Turquoise	$.52
Malachite Green	$.53
Red	$.58

In addition to the above, Black is also available in:

1½ den. 1⅛"	5½ den. 3"
3 den. 1⅛"	5½ den. 6"
3 den. 1-9/16"	

Terms: Net 30 days f.o.b. LeMoyne, Alabama: Minimum transportation allowed to points in U.S.A. east of Mississippi River.

Corval® Cross Linked Rayon

Man-made, cross-linked, regular or crimped cellulosic staple, semi-dull and dull — $.37 per lb.

Topel® Cross-Linked Rayon

Man-made, cross-linked, cellulosic staple, semi-dull and dull — $.37 per lb

Terms: Net 30 days f.o.b. LeMoyne, Alabama: Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Fibres Co.

Div. Bigelow-Sanford, Inc.

Rayon Staple

Effective October 20, 1960

Regular

1.5 & 3.0 denier Bright & Dull, 1-9/16", 2" .27

White (Crimped)

8 denier 3" Bright .27

15 denier 3" Bright .27

15 denier 3" Dull .27

"KOLORBON"—Solution Dyed Rayon Staple—3" and 6"

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	.38	.38	....
Sandalwood	.38	.38	....
Nutria	.38	.38	....
Sea Green	.38	.38	....
Mint Green	.38	.38	....
Champagne	.38	.38	....
Midnight Black	.38	....	.38
Gold	.38	.38	....
Turquoise	.38	.38	....
Melon	.38	.38	....
Capri Blue	.38	.38	....
Charcoal Grey	.38	.38	....
Coco	.38	.38	....
Sable	.38	....	.38
Tangerine	.59	....	.59
Chinese Red	.59	....	.59
Larkspur Blue	.38	.38	....
Royal Blue	.59	....	.59
Lemon Peel	.48	.48	....
Kelly Green	.45	.45	....
Bitter Green	.59	....	.59
Brazil	....	.38	....
Redwood	....	....	.38
Frost Green	....	.38	....
Mist Grey	....	.38	....
Medium Brown	....	.38	....
Dark Brown	....	....	.38
Woodtone	....	.38	....

Eastman's Progress

(Continued from page 64)

has not yet been decided. Tests currently under way will help in this decision. The fact is that Eastman, pleased as it is with the textile performance of its own polypropylene, must be convinced that there is a profitable future for polypropylene fibers big enough to warrant the full-scale production and marketing of such a fiber by Eastman.

To turn back to Eastman's plans for Kodel, no one in American business is more keenly aware than Eastman Kodak that brand names, to be successfully promoted, must perform as advertised. Consequently Eastman is determined to insure, as much as is humanly possible in the long-drawn out chain of textile distribution from fiber producer to retailer, that apparel bearing the Kodel label will give satisfaction.

Now being readied by Amos Griffin, is a carefully worked out, no-nonsense program of controlling the quality of the finishing of Kodel fabrics. In brief, the plan will set up finishing contracts between integrated mills, commission finishers and Eastman fixing minimum performance standards for finishing Kodel fabrics. If a mill or commission finisher does not live up to the terms of the contract, Eastman will cut off the supply of fiber going to the mill making the cloth that is not being finished as Eastman requires.

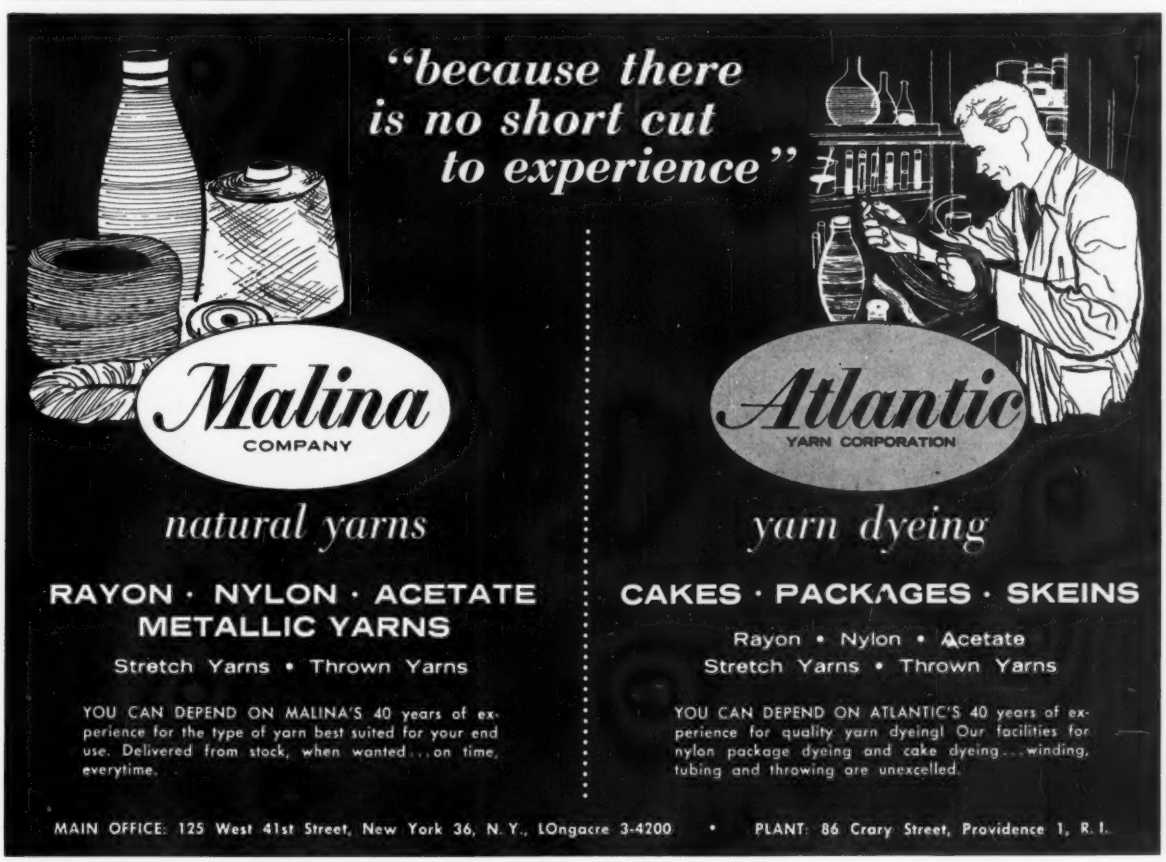
Such a stringent quality control program, Eastman realizes, will require courage, and the unrelenting will to carry it out without weakening. But Eastman is determined to do just that. There is no other course, in Churchill's opinion, if a new fiber is to gain acceptance and provide a profitable return on the enormous expenses and nerve-straining effort that, under today's conditions, must go into developing, promoting and marketing it.

The road that leads from the introduction of a new fiber to the point where it reaches broad acceptance and sales of, say, upwards of 40 million pounds a year, is a long one plentifully strewn with obstacles and unforeseen booby traps for the unwary and faint-hearted. But if any of the newer fibers can successfully negotiate this hazardous journey, Kodel should be it. Behind Kodel lies Eastman's 30 years' experience in marketing manmade fibers to the textile industry—experience that is of immeasurable value in the task that Eastman has set for itself. And also supporting Kodel on its Journey Perilous is not only Eastman's plentiful textile experience, but a record for successfully achieving its marketing objectives in everything from George Eastman's original dry photographic plates for 19th century photographers to Eastman's newest line of polypropylene plastics. From so strong a habit of success Kodel can hardly help but benefit.

Shaggy Poodle Sock

Brown Sales Corp. has launched a new sock item, the Shaggy Poodle, which it hopes will establish another footwear trend for girls. It has been introdueed to complement Brown's earlier Poodle development. Made of Orlon and stretch nylon, the Shaggy Poodle socks are being offered for the Fall season to match the popular shaggy sweaters and skirts usually worn with them.

The new sock was developed in Canada by a licensee of Patent Hose Corp., another Brown interest.


"because there is no short cut to experience"
Malina
COMPANY
natural yarns
RAYON · NYLON · ACETATE
METALLIC YARNS
Stretch Yarns • Thrown Yarns
YOU CAN DEPEND ON MALINA'S 40 years of experience for the type of yarn best suited for your end use. Delivered from stock, when wanted...on time, everytime.
Atlantic
YARN CORPORATION
yarn dyeing
CAKES · PACKAGES · SKEINS
Rayon • Nylon • Acetate
Stretch Yarns • Thrown Yarns
YOU CAN DEPEND ON ATLANTIC'S 40 years of experience for quality yarn dyeing! Our facilities for nylon package dyeing and cake dyeing...winding, tubing and throwing are unexcelled.
MAIN OFFICE: 125 West 41st Street, New York 36, N. Y., LOngacre 3-4200 • PLANT: 86 Crary Street, Providence 1, R. I.

Antique Gold	....	.38	....
Light Turquoise	....	.38	....
Hunter Green	....	.38	....

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

"Zantrel Polynosic" Rayon

Effective August 14, 1959

Man-made, cellulosic staple.

Semi-Bright, 1 denier, 1 916/"	$.45 per lb.
1½ denier, 1¼" and 1 9/16"	.42 per lb.
3 denier, 1 9/16" and 2"	.42 per lb.

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

North American Rayon Corporation

Current Prices

Rayon Staple

Super High Tenacity	Bright
No. 1 (Unshrunk)	
1, 1.5 & 2.3 deniers	.40
No. 2 (Preshrunk)	
1, 1.5 & 3 deniers	.40

Rayon Tow

Tow Yarns for Tow Breaking	Bright No Twist Tow Tubes
4400/2934	$.45
6000/2934	.45
Tow Yarns for Ribbon	**Bright No Twist Tubes**
1100/480/960	.60
1650/720/1100	.56
1800/720/960	.54
2000/1466	.52
2200/960	.52
3000/960/1466/2934	.47½
3300/1466/2934	.47½
4400/2000/2934	.47½
6000/2934	.47½
6600/2000/2934	.47½

"Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

TRIACETATE

Celanese Fibers Company

Current Prices Effective June 7, 1957

(Most Deniers Available in Bright or Dull Luster)

*Arnel Staple and Tow

Arnel Triacetate Staple	Bright & Dull
2.5 Individual Denier	$.55
5.0 Individual Denier	.55
Arnel Triacetate Tow	
2.5 Individual Denier 114,000 Total Denier	$.60
5.0 Individual Denier 90,000 Total Denier or 180,000 Total Denier	.60

Packaged on Ball Warps

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

* Registered Trademark of Celanese Corp. of America.

NON CELLULOSIC YARN

NYLON

Allied Chemical Corporation

Caprolan®

Current Yarn Prices: Effective May 1, 1960

Denier	Filament	Turn/In.	Twist	Type**	Package	1st Grade Price/Lb.
140	16	1½	Z	B	Cones*	$1.60
140	16	1½	Z	B	Beams	1.65
200	16	1½	Z	B	Cones*	1.49
200	16	1½	Z	B	Beams	1.54
200	32	¾	Z	B	Bobbins	1.49
200	32	¾	Z	B	Beams	1.54
210	32	1	Z	HB	Bobbins	1.49
260	16	1	Z	HB	Bobbins	1.49
420	64	½	Z	HBT	Bobbins	1.39
420	64	½	Z	HBT	Beams	1.44
520	32	1	Z	B	Bobbins	1.39
520	32	1	Z	B	Beams	1.44
840	136	½	Z	HBT	Al. Tubes	0.94
840	136	½	Z	HBT	Beams	0.92
1680	272	½	Z	HBT	Al. Tubes	0.94
1680	272	½	Z	HBT	Beams	0.92
1050	56	½	Z	B	Al. Tubes	1.15
2100	112	½	Z	B	Al. Tubes	1.11
4200	224	0	O	B	Paper Tubes*	1.10
2100	408	0	O	HB	Paper Tubes*	0.97
2500	408	0	O	HB	Paper Tubes*	0.97
3360	544	0	O	HB	Paper Tubes*	0.96
4200	680	0	O	HB	Paper Tubes*	0.96
5000	816	0	O	HB	Paper Tubes*	0.96
5800	952	0	O	HB	Paper Tubes*	0.96
7500	1224	0	O	HB	Paper Tubes*	0.95
10000	1632	0	O	HB	Paper Tubes*	0.95
15000	2448	0	O	HB	Paper Tubes*	0.95

Terms—Net 30 days.

Price subject to change without notice.

Bobbins are invoiced at 45¢ ea.

Aluminum Tubes are invoiced at 40¢ ea.

Beams are invoiced at $220.00.

Cradles for beams are invoiced at $53.00.

B—Bright
H—High Tenacity
T—Heat Stabilized

* Paper Tubes and Cones non-returnable, no charge.

** Type is used to describe luster and tenacity.

All prices quoted F.O.B. Shipping Point.

Minimum transportation charges allowed and prepaid in Continental United States, excluding Alaska.

American Enka Corporation

Enka Nylon Prices

Effective March 21, 1961

Denier/Mono Filament	Luster	Twist	Package	Price Per Pound Standard	Price Per Pound Substandard
15/1	SD or D	0.5Z	Pirns	3.89	3.69
15/1	SD or D	0.5Z	Spools	4.00	....
20/1	SD	0.5Z	Pirns	3.53	3.30
20/6	SD	0.5Z	Pirns	2.91	2.61
20/6	SD	0.5Z	Spools	3.02	....
20/6	Dull	0.5Z	Pirns	2.96	2.61
20/6	Dull	0.5Z	Spools	3.07	....
30/1	SD	0.5Z	Pirns	4.13	3.93
30/2 Enkatron**	SD	0.5Z	Pirns	2.46	2.31
30/6	SD	0.5Z	Pirns	2.36	2.21
30/6	SD	0.5Z	Spools	2.46	....
40/8-13	SD	0.5Z	Pirns	2.01	1.91
40/8-13	SD	0.5Z	Spools	2.11	....
40/8	SD-B de B*	0.5Z	Pirns	2.10	2.00
40/13	Dull	0.5Z	Pirns	2.06	1.96
40/13	Dull	0.5Z	Spools	2.16	....
50/13	SD	0.5Z	Pirns	1.91	1.76
50/13	SD	0.5Z	Spools	2.01	....
50/13	SD-B de B*	0.5Z	Pirns	2.00	1.85
50/13	SD-B de B*	0.5Z	Spools	2.10	....
70/16-32	B or SD	0.5Z	Pirns	1.71	1.66
70/32	SD-B de B*	0.5Z	Pirns	1.80	1.75
100/32	SD	0.5Z	Pirns	1.65	1.60
100/32	SD-B de B*	0.5Z	Pirns	1.74	1.69
140/24	Bright	1.5Z	Cones	1.60	1.55
140/24	Bright	1.5Z	Beams	1.65	....
140/32-64	SD	0.5Z	Pirns	1.60	1.55
140/32-64	SD-B de B*	0.5Z	Pirns	1.69	1.64
200/16-32	Bright	0.5Z	Cones	1.49	1.44
200/16-32	Bright	0.5Z	Beams	1.54	....
200/16-32	Bright	1.5Z	Cones	1.49	1.44
200/16-32	Bright	1.5Z	Beams	1.54	....
200/32	SD-B de B*	0.5Z	Cones	1.58	1.53
200/16-32	Bright	0.5Z	Cones	1.49	1.39
210/32	BHT	0.5Z	Cones	1.49	1.44
210/32	BHT	0.5Z	Beams	1.54	....
260/16	BHT	0.5Z	Cones	1.49	1.39
260/16	BHT	0.5Z	Beams	1.54	....
400/64	Bright	0.5Z	Cones	1.39	1.29
420/64	BHT	0.5Z	Cones	1.39	1.29
420/64	BHT	0.5Z	Beams	1.44	....
520/32	Bright	0.5Z	Cones	1.39	1.29
520/32	BHT	0.5Z	Cones	1.39	1.29
520/32	BHT	0.5Z	Beams	1.44	....
1040/68 Enkatron**	SD	0.5Z	Cones	1.30	1.20
1230/68 Enkatron**	SD	0.5Z	Cones	1.30	1.20
840/140	BHT	0.5Z	Cones	.94	.92
840/140	BHT	0.5Z	Beams	.92	....

* Blanc de Blancs = Enka Trademark White of Whites.

** Enkatron = Enka Trademark Multilobal Yarns.

*Luster: B—Bright; H—High Tenacity; T—Heat Stabilized; SD—Semi-Dull; D—Dull; *SD-B de B.

Pirns invoiced at 25¢ or 45¢ each, depending on type. Deposits refunded upon return of pirns in good condition. Cones are not returnable. Spools, Beams and Racks are deposit carriers and remain the property of American Enka Corporation.

Terms: Net 30 days from date of invoice. Minimum common carrier transportation charges will be prepaid and absorbed to first destination in the continental limits of the United States excluding Alaska and Hawaii. In prepaying transportation charges, seller reserves the right to select carrier used.

All prices subject to change without notice.

*B de B—Blanc de Blancs®—White of Whites Color.

The Chemstrand Corp.

Current Prices Effective January 1, 1960

Denier	Filament	Twist	Type	Package	Standard Price/lb.	Second Price/lb.
10	1	O	SD	Bobbins	$7.16	$6.56
* 15	1	O	RSD	Bobbins	3.89	3.69
15	1	O	RSD	Spools	4.00	....
15	1	O	Dull	Bobbins	3.89	3.69
15	1	O	Dull	Spools	4.00	....
20	7	Z	RSD	Bobbins	2.91	2.61
20	7	Z	RSD	Spools	3.02	....
* 30	10	Z	RSD	Bobbins	2.36	2.21
* 30	26	Z	RSD	Bobbins	2.49	2.21
* 40	10	Z	RSD	Bobbins	2.01	1.91
* 40	13	Z	RSD	Bobbins	2.01	1.91
40	13	Z	RSD	Spools	2.11	....
40	13	O	RSD	Draw Wind	2.01	1.91
* 40	13	Z	Dull	Bobbins	2.06	1.96
40	13	Z	Dull	Spools	2.16	....
40	13	O	Dull	Draw Wind	2.06	1.96
* 50	17	Z	RSD	Bobbins	1.91	1.76
50	17	O	RSD	Draw Wind	1.91	1.76
* 50	17	Z	Brt.	Bobbins	1.91	1.76
70	17		RSD	Bobbins	1.71	1.66
* 70	20	Z	RSD	Bobbins	1.71	1.66
* 70	34	Z	RSD & SD	Bobbins	1.71	1.66
70	34	O	RSD & SD	Draw Wind	1.71	1.66
70	34	Z	Brt.	Bobbins	1.71	1.66
70	34	O	Brt.	Draw Wind	1.71	1.66
70	34	Z	HB	Bobbins	1.76	1.66
70	34	O	HB	Bobbins	1.76	1.66
70	34	Z	RB	Bobbins	1.71	1.66

More Caprolan Carpets

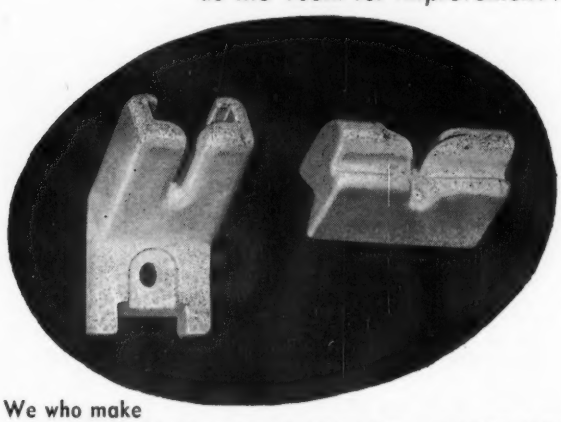
Custom textured continuous filament nylon yarns are slated for substantially wider application in the carpet field, according to Allied Chemical Corp. The company said that, in addition to promoting its own Textured Caprolan nylon, it has been encouraging the production by independent throwsters of yarns which provide the stylist with stimulating variety in design, ever since 1956.

Two new carpet qualities produced by C. H. Masland & Sons, which use textured Caprolan nylon and which have been awarded Allied Chemical's "Certified for Performance" label, were introduced at the Chicago Summer Home Furnishings Market. The two new carpets feature a two-tone tight velvet with raised striations, and a tufted carpet in big, tight loops in a three-color tweed. Both will retail for about $8.95 a square yard.

Glittering Felt

American Felt Co. has added to its new "Galaxie Felt" line gold, silver and colored glitter through a new application process. The new process permits permanent adherence of glitter to felt while maintaining drapeability of the material to which it is applied. There is no objectionable flaking or shedding of the glitter while in use, American Felt reports. The glitter felt can be dry cleaned. The new felt offers possibilities in the fields of novelty items, retail merchandising, display and background uses, slippers, bags, apparel and decorative uses. *For further information write the editors.*

There is no room so big as the 'room for improvement'.



We who make

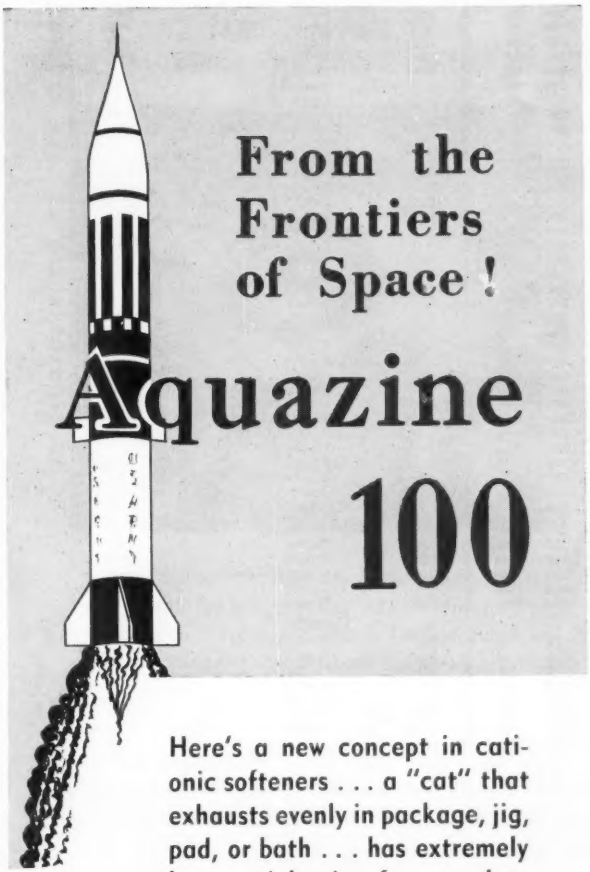
LAMBERTVILLE THREAD GUIDES

have a 'room for improvement'. It's our research laboratory, a room dedicated to constant search for ever better guide materials and manufacturing techniques. It's this room and the people who work there that are responsible for the extra hardness, smoothness and durability of Lambertville guides. Available in white or 'Durablu' finish. Write for catalogue and samples.

Lambertville Ceramic AND MANUFACTURING COMPANY

LAMBERTVILLE, NEW JERSEY

LAMBERTVILLE: YOUR GUIDE TO BETTER OPERATIONS!



Here's a new concept in cationic softeners . . . a "cat" that exhausts evenly in package, jig, pad, or bath . . . has extremely low particle size for complete penetration . . . is *non-yellowing* on the most difficult applications . . . and costs less to use.

Aquazine 100 gives a smooth silky hand and excellent drape to cottons, wools, synthetics and blends . . . delivers the "plus" benefits that please your customers.

Didn't realize they still make miracles? Just ask your Moretex Man for details and samples of Aquazine 100, the "way out" cationic softener.

*Trademark for hydrazine based softener produced by Moretex under basic patents of W. R. Grace Co.

MORETEX

CHEMICAL PRODUCTS, INC.

314 West Henry Street Spartanburg, South Carolina

Manufacturing Chemists for a half century of Textile Progress

100	26	Z	RSD	Bobbins	1.65	1.60
100	34	Z	RSD	Bobbins	1.65	1.60
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
140	68	Z	Brt.	Bobbins	1.60	1.55
• 200	34	Z	Brt.	Bobbins	1.49	1.44
200	34	O	Brt.	Draw Wind	1.49	1.44
200	34	Z	Brt.	Spools	1.54	....
• 200	68	Z	RSD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	O	HB	Draw Wind	1.49	1.44
210	34	Z	HB	Spools	1.54	....
210	34	Z	HB	Beams	1.54	....
210	34	Z	RHB	Bobbins	1.49	1.44
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Beams	1.54	....
420	68	Z	HB	Bobbins	1.39	1.29
420	68	Z	RHB	Bobbins	1.39	1.29
520	34	Z	HB	Bobbins	1.39	1.29
720	140	Z	RHB	Beams	.99	....
840	140	Z	HB	Tubes	.94	.92
840	140	Z	HB	Beams	.92	.90
840	140	Z	HB	Cones	.95	.93
840	140	Z	RHB	Tubes	.94	.92
840	140	Z	RHB	Beams	.92	.90
840	140	Z	RHB	Cones	.95	.93
840	140	Z	HB	Paper Tubes	.94	.92
840	140	Z	RHB	Paper Tubes	.94	.92
840	140	Z	RHB	Textile Grade—W.W.	1.06	.92
840	140	Z	HB & RHB	Raschel Spools	1.00	....
1050	170	Z	RHB	Tubes	.94	.92
1680	280	Z	RHB	Tubes	.94	.90
1680	280	Z	RHB	Beams	.92	....
1680	280	Z	RHB	Cones	.95	.91
1680				Spools	.99	.91

Cumuloft®

520	34	Z	RB	Tubes	2.05	....
1040	68	Z	RB	Tubes	1.74	....
1230	68	Z	RSD	Paper Tubes	1.53	....
2080	136	Z	RB	Tubes	1.66	....
3690	204	S	RSD	Cones	1.47	....

Cadon™

15	1	O	Brt.	Bobbins	4.90	4.70
15	1	O	Brt.	Spools	5.01	....
70	34	Z	RSD	Bobbins	1.81	....
200	34	Z	RB	Bobbins	1.54	....
520	34	Z	RB	Bobbins	1.44	1.34
1040	68	Z	RB & RSD	Tubes	1.30	1.20
1230	68	Z	RSD	Tubes	1.30	1.20
2080	136	Z	RB	Tubes	1.26	....

• These counts also available in Warp Wind package at price shown for Bobbins.

* Types: D—Dull; SD—Semi-dull; B—Bright; H—High tenacity.

Bobbins are invoiced at **25¢ or 45¢**, depending on type; tubes are invoiced at **40¢** each; spools invoiced at **$95.00**, **$110.00**, and **$115.00**, depending on type; and beams and crates for beams are invoiced at **$220.00** and **$25.00** respectively.

Prices subject to changes without notice.

Freight prepaid within Continental United States and Puerto Rico

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	First Grade	Second Grade
7-1	0	200	Bobbin	$8.05	$7.40
10-1	0	200	Bobbin	7.16	6.56
12-1	0	200	Bobbin	6.35	5.85
15-1	0	90	Bobbin	4.90	....
15-1	0	90	Kntg. Beam	5.01	....
15-1	0	200	Kntg. Beam	4.00	....
15-1	0	200/280	Bobbin	3.89	3.69
15-1	0	680	Kntg. Beam	4.00	....
15-1	0	680	Bobbin	3.89	3.69
20-1	0	200/280	Bobbin	4.03	3.68
30-1	0	200	Bobbin	4.13	....
40-1	0	100	Bobbin	4.03	3.75
14-2	0.2Z	200	Bobbin	6.72	6.12
17-2	0.2Z	200	Bobbin	5.96	5.41
20-2	0.2Z	200	Bobbin	4.71	4.27
15-3	0.2Z	200	Bobbin	5.19	4.69
21-3	0.2Z	200	Bobbin	4.70	4.27
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	200	Kntg. Beam	3.02	....
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	0.5Z	680	Kntg. Beam	3.07	....
20-17	0.5Z	280	Bobbin	3.51	....
20-17	0.5Z	280	Kntg. Beam	3.62	....
20-20	0.7Z	209	Bobbin	6.00	....
28-4	0.2Z	200	Bobbin	2.81	2.61
30-10	0	200	Drawwinder Tube	2.36	2.21
30-10	0.5Z	200/280	Bobbin	2.36	2.21
30-10	0.5Z	200/280	Kntg. Beam	2.46	....
30-10	0.5Z	300	Bobbin	2.51	2.36
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Kntg. Beam	2.51	....
30-26	0.5Z	200/280	Bobbin	2.49	2.21
30-26	0.5Z	200/280	Kntg. Beam	2.59	....
40-7	0.5Z	200	Bobbin	2.11	1.91
40-10	0.5Z	200/280	Bobbin	2.01	1.91
40-10	0.5Z	200/280	Kntg. Beam	2.11	....
40-13	0.5Z	200/280	Kntg. Beam	2.11	....
40-13	0.5Z	100/200/280	Bobbin	2.01	1.91
40-13	0	200	Drawwinder Tube	2.01	1.91
40-13	0.5Z	300/400/480	Bobbin	2.13	1.90
40-13	0.5Z	680	Bobbin	2.06	1.96
40-13	0.5Z	680	Kntg. Beam	2.16	....
40-34	0.5Z	200	Bobbin	2.21	1.81
50-10	0.5Z	200/280	Bobbin	2.11	1.76
50-17	0.5Z	100/200/280	Bobbin	1.91	1.76
50-17	0	200	Drawwinder Tube	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
50-17	0	685	Paper Tube	2.01	1.76
60-20	0.5Z	200/280/288	Bobbin	1.82	1.65
60-34	0.5Z	300	Bobbin	1.86	1.76
70-17	0.5Z	200/288	Bobbin	1.71	1.66
70-20	0.5Z	288	Bobbin	1.71	1.66
70-34	0.5Z	91	Bobbin	1.80	1.75
70-34	0.5Z	100/180/200	Bobbin	1.71	1.66
70-34	0	105/205	Paper Tube	1.71	1.66
70-34	0	100/200/285	Drawwinder Tube	1.71	1.66
70-34	0.5Z	280/288	Bobbin	1.71	1.66
70-34	0.5Z	300/680	Bobbin	1.76	1.66
70-34	0	680/685	Paper Tube	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.60
90-26	0.5Z	200/288	Bobbin	1.76	1.66
100-34	0.5Z	200/288	Bobbin	1.65	1.60
100-34	0	300	Drawwinder Tube	1.70	1.60
100-34	0.5Z	300/680	Bobbin	1.70	1.60
100-50	0.5Z	200/288	Bobbin	1.71	1.60
110-50	0.5Z	200	Bobbin	1.71	1.60
140-34	0.5Z	680	Bobbin	1.65	1.60
140-68	0.5Z	91	Bobbin	1.69	1.64
140-68	0.5Z	100/180/280	Bobbin	1.60	1.55
140-68	0	200	Drawwinder Tube	1.60	1.55
140-68	0.5Z	200/288	Bobbin	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
140-68	0.5Z	680	Bobbin	1.65	1.60
200-20	0.7Z	100/180	Bobbin	1.49	1.44
200-34	0	100	Drawwinder Tube	1.49	1.44
200-34	0.7Z	100/280	Bobbin	1.49	1.44
200-34	0	105	Paper Tube	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	100/200	Bobbin	1.56	1.46
210-34	0	300	Drawwinder Tube	1.49	1.44
210-34	0.7Z	300/330	Bobbin	1.49	1.44
210-34	0.7Z	300/330	Kntg/Section Beam	1.54	....
210-34	0	305	Paper Tube	1.49	1.44
260-17	1Z	300/380	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
420-68	1Z	300	Kntg/Section Beam	1.44	....
520-34	1Z	300/380	Bobbin	1.39	1.29
630-102	0.7Z	300	Bobbin	1.39	1.29
780-51	1Z	300/380	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29
840-136	1Z	300	Bobbin	1.34	1.24
840-136	1Z	300	Kntg/Section Beam	1.39	....

Nylon Filament "Antron" Yarn Prices

20-7	0.5Z	560 Brt.	Bobbin	3.06	2.76
20-7	0.5Z	560 S.D.	Bobbin	3.06	2.76
30-10	0.5Z	560 S.D.	Bobbin	2.46	2.31
40-13	0.5Z	560 Dull	Bobbin	2.16	2.06
40-13	0.5Z	560 Mid-Dull	Bobbin	2.11	2.01
40-13	0.5Z	560 S.D.	Bobbin	2.11	2.01
40-13	0.5Z	560 Brt.	Bobbin	2.11	2.01
50-17	0.5Z	560 S.D.	Bobbin	2.01	1.86
70-34	0	565 S.D.	Paper Tube	1.81	1.76
70-34	0.5Z	560 S.D.	Bobbin	1.81	1.76
70-34	0	560 S.D.	Drawwinder Tube	1.81	1.76
200-20	0.7Z	560 Brt.	Bobbin	1.54	1.49
200-34	0.7Z	560 S.D	Bobbin	1.54	1.49
200-34	0	565 S.D.	Paper Tube	1.54	1.49
520-34	1Z	560 Brt.	Bobbin	1.44	1.34
780-51	1Z	560 Brt.	Bobbin	1.44	1.34

* Antron is DuPont's registered trademark for its trilobal multifilament nylon yarn.

Color-Sealed Black Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
30-10	0.5Z	140	Bobbin	$2.71	$2.56
40-13	0.5Z	140	Bobbin	2.36	2.16
70-17	0.5Z	140/148	Bobbin	2.06	2.01
70-34	0.5Z	140	Bobbin	2.06	2.01
100-34	0.5Z	140	Bobbin	2.00	1.95
200-20	0.7Z	140	Bobbin	1.84	1.79
200-34	0.7Z	140	Bobbin	1.84	1.79
260-20	1Z	140	Bobbin	1.84	1.79

INDUSTRIAL YARNS

Tire Quality

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
840-140	0.5Z	300/700	Aluminum Tube	$.94	$.92
840-140	0.5Z	300/700	Beam	.92	....
840-140	0.5Z	300/700	Kntg Beam	1.00	....
1050-168	0.5Z	700	Beam	.92	....
1050-168	0.5Z	700	Alum. Tube	.94	.92
1680-280	0.5Z	700	Cone, Paper Tube	.95	.92
1260-210	0.5Z	700	Beam	.92	....
1680-280	0.5Z	700	Aluminum Tube	.94	.92
1680-280	0.5Z	700	Beam	.92	....
840-140	0.5Z	300/700	Cone, Paper Tube	.95	.92

Industrial Quality

840-140	0.5Z	707	Cone, Pape Tube	.95
2520-420	0	700	Paper Tube	.97
3360-560	0	700	Paper Tube	.96
5040-840	0	707	Paper Tube	.99
5040-840	0	700	Paper Tube	.96
7560-1260	0	707	Paper Tube	.98
7560-1260	0	700	Paper Tube	.95
10080-1680	0	707	Paper Tube	.98
15120-2520	0	707	Paper Tube	.98

These prices are subject to change without notice. Terms: Net 30 Days

Types

Type 90—Bright, normal tenacity, trilobal—cross section.
Type 91—Semidull, super white, normal tenacity, for intimate apparel use only.
Type 100—Bright, normal tenacity.
Type 105—Bright, normal tenacity, low shrinkage (5-7%).
Type 140—Bright, color-sealed, black, normal tenacity.
Type 148—Bright, color-sealed Black, normal tenacity, for texturing.
Tyep 200—Semidull, normal tenacity.
Type 205—Semidull, normal tenacity, low shrinkage (5-7%).
Type 209—Semidull, normal tenacity, improved light durability and dye light fastness. For electrical uses.
Type 280—Semidull, normal tenacity, improved light durability and dye light fastness.

Printed Foams Introduced

A new concept in laminates, printed foam, has been developed by Riegel Textile Sales Co. Tradenamed "Fashion Foam," the print technique can be applied to the foam side of the laminate achieving a reversible look. One pattern is available for delivery and a complete line will shortly be introduced which will include paisleys, florals and geometrics. The prints are said not to crock or fade and have been tested up to 110 washings and 60 drycleanings. The new printed foam laminates are expected to find use in men's, women's and children's leisure wear and rainwear and in draperies, slippers and luggage. For further information write the editors.

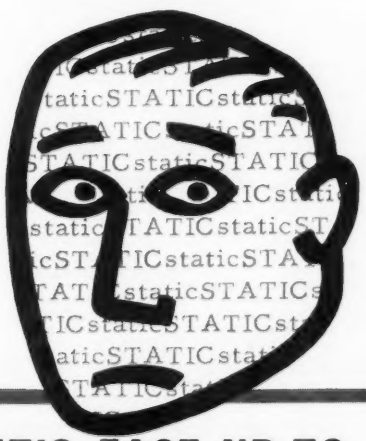
INDUSTRIAL ENGINEERS

- MODERNIZATION PROGRAMS
- PLANT LAYOUTS
- COST SYSTEMS
- COST REDUCTION REPORTS
- WORK LOAD STUDIES
- MANAGEMENT PROBLEMS
- SPECIAL REPORTS

GREENVILLE, S. C.
Dial CEdar 2-3868
FALL RIVER, MASS.
Dial OSborne 6-8261

SPECIALIZING IN TEXTILES SINCE 1914

Ralph E. Loper Co.



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STATIC!

Starting immediately, you can clear up all of your static problems . . . no matter how severe . . . in all textile applications. The SIMCO *"Midget"* is *guaranteed* to do the job effectively, safely, inexpensively! Write or call *now* for information about Simco's complete line of electronic neutralizers, anti-static cleaning devices, sprays, and meters for measuring static.

the SIMCO company
920 Walnut Street, Lansdale, Pa.

NO YARN TRAPPING WITH
BRAZED ALUMINUM TWO POUND TAKE-UP BOBBIN

New aluminum take-up bobbin with barrel and heads brazed together into a single unit prevents yarn trapping. Exceptional strength at price no higher than ordinary bobbins.

Write us today for full details.

BW MACK ALLENTOWN BOBBIN WORKS, INC.
ALLENTOWN PENNSYLVANIA

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LINDSEY I. PHILLIPS, Treasurer, Taunton, Mass.

Consult your friendly Dary Representative:

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JAMES H. CARVER — Box 22, Rutherfordton, N. C.
CRAWFORD "JACK" RHYMER — Box 2281, Greenville, S. C.

Type 285—Semidull, normal tenacity, low shrinkage, imrpoved light durability, and dye light fastness.
Type 288—Semidull, normal tenacity, for texturing.
Type 300—Bright, high tenacity.
Type 305—Bright, high tenacity, low shrinkage (5-7%).
Type 330—Bright, high tenacity, more heat & light resistant.
Type 380—Bright, high tenacity, improved light durability and dye light fastness.
Type 400—Semidull, high tenacity.
Type 480—Semidull, high tenacity, improved light durability and dye light fastness.
Type 560—Luster as designated—Modified cross section. Improved light durability and dye light fastness.
Type 565—Luster as designated—Modified cross section, low shrinkage. Improved light durability and dye light fastness.
Type 680—Dull, normal tenacity.
Type 685—Dull, normal tenacity, low shrinkage (5-7%).
Type 700—Bright, high tenacity.
Type 707—Bright, high tenacity cordage yarn.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

Following are invoiced as a separate item.
Bobbins—25 cents or 45 cents depending on type
Aluminum Tube—40¢ each
Draw Winder Tubes—$1.00
Industrial & Section Beams—$220.00 each
Racks for Industrial & Section Beams—$50.00 each
Tricot Beams—$95.00 or $250.00 each depending upon type
Racks for Tricot Beams—$70.00 or $130.00 each depending upon type
Raschel Beams—$85.00 or $100.00 each depending upon type
Racks for Raschel Beams—$70.00 each

Knitting (Tricot and Raschel) and Section Beams and Racks are billed at above prices if not returned within 180 days from date of invoice. Industrial beams and racks are billed if not returned within 60 days from date of invoice.

(Beams and Racks are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"*

Denier & Filament	Turns/Inch	Luster	Type*	Package	Tubes 1st Gr.
30-14	0	Bright	55	Tube	$2.60
30-20	0	Semidull	56	Tube	2.60
40-27	0	Semidull	56	Tube	2.35
40-27	0	Bright	55	Tube	2.35
40-27	0	Dull	57	Tube	2.40
70-34	0	Semidull	56	Tube	1.97
70-14	0	Bright	55	Tube	1.97
70-34	0	Bright	55	Tube	1.97
70-34	0	Dull	57	Tube	2.02
100-34	0	Semidull	56	Tube	1.90
140-28	0	Bright	55	Tube	1.85
150-34	0	Semidull	56	Tube	1.85
220-50	0	Bright	51	Tube	1.76
250-50	0	Bright	55	Tube	1.76
1100-250	0	Bright	51	Core	1.50
1100-250	0	Bright	52	Core	1.50
1100-250	Ro2	Bright	52	Core	1.50
1100-250	Ro2	Bright	52	Beam	1.50

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the Continental limits of the U. S., excluding Alaska.

Yarn Types

* Type:
Type 51—Bright, high tenacity.
Type 52—Bright, high tenacity.
Type 55—Bright, normal tenacity.
Type 56—Semidull, normal tenacity.
Type 57—Dull, normal tenacity.

Tubes are invoiced as a separate item at $.70 each.

Industrial beams and cradles are billed if not returned within 60 days from date of invoice. They are then billed as separate items at $220.00 per beam and $50.00 per cradle and are returnable for credit.

*"DACRON" is DuPont's registered trade-mark for its polyester fiber.

SARAN

The National Plastics Products Company—Fibers Division Odenton, Maryland

Current Prices:

CONTINUOUS FILAMENT

Type	Twist p. i.	Natural	Colors
750/20*	3	1.75	1.80

* For filter fabrics and other industrial purposes only.

F.O.B. Odenton, Maryland.

Terms: Net 30 days.

NON CELLULOSIC STAPLE & TOW ACRYLIC

American Cyanamid Co. Fibers Division

Effective Date: September 21, 1961

Cyanamid Acrylic Staple

	1st Grade Price (per pound)
2.0 Denier Bright and Semi-Dull	$1.18
3.0 Denier Bright and Semi-Dull	1.18
5.0 Denier Bright and Semi-Dull	1.18
15.0 Denier Bright and Semi-Dull	.745

Staple Lengths: 1½", 2", 2½", 3", 3½", 4", 4½".

Type WM + BC—Designed for the woolen spinning system and is a blend of deniers (average 4) and length .96

Type BC—Designed for blending with cellulosics and is 2 or 3 denier 1½" semi-dull regular staple ... 1.08

Information provided on request for Deniers, Lengths and Lusters not listed above.

Prices are subject to change without notice.

Terms: Net 30 Days.

F.O.B. Shipping Point—Minimum transportation allowed (Seller's route and method) within the continental limits of the United States excluding Alaska. If Buyer requests and Seller agrees to a route or method involving higher than minimum rate, Buyer shall pay the excess transportation cost.

Note: CRESLAN® is Cyanamid's registered trademark for certain of its acrylic fibers. Use of this trademark is authorized only on properly constructed fabrics, after they have been tested and approved by Cyanamid.

The Chemstrand Corp.

"Acrilan"*

Current Prices Effective January 1, 1961

Denier	Type	Regular Acrilan "A" Qual.	Regular Acrilan 2nd Qual.	Acrilan 16 "A" Qual. $1.28	Acrilan 16 2nd Qual.
1.0	Staple	$	$	1.18	1.03
2.0	Staple	1.18	1.03	1.18	1.03
2.0	Tow	1.22	1.03	1.22	1.03
2.5	Hi-Bulk Staple	1.18	1.03	1.18	1.03
2.5	Hi-Bulk Tow	1.22	1.03	1.22	1.03
3.0	Staple	1.18	1.03	1.18	1.03
3.0	Tow	1.22	1.03	1.22	1.03
5.0	Staple	1.18	1.03	1.18	1.03
5.0	Tow	1.22	1.03	1.22	1.03
8.0	Staple	1.18	1.03	1.18	1.03
8.0	Tow	1.18	1.03	1.18	1.03
15.0	Staple	.745		.745	
15.0	Tow	.95	....	.95	....

Staple and Tow available in Bright and Semi-Dull lusters.

Acrilan Spectran™

		Dark	Light
2.5	Staple	1.39	1.29
3.0	Staple	1.39	1.29
3.0	Tow	1.44	1.34

Acrilan Spectran—Staple and Tow available in Bright lusters only.
Dark—Black, Dark Blue, Brown, Dark Grey and Olive.
Light—Taupe, Gold, Beige and Light Grey.

Fiberfill	....	....	1.01	....
Types 77, 88 and 89 Staple	....	....	.94	....

TERMS: Net 30 Days.

F.O.B. shipping point, freight prepaid: seller to select and pay transportation charges of carrier to points within the continental limits of the United States, excluding Alaska.

* "Acrilan" is Chemstrand's registered trademark for its acrylic fiber.

The Dow Chemical Company

Textile Fibers Department Current Prices

"Zefran"* Acrylic Staple

Type 1207	Staple Length	
2.0 Denier	1½", 2", 3"	$1.24
3.0 Denier	1½", 2", 2½", 3", 4½"	1.18

100% Blends of ZEFRAN 1207 Acrylic fiber (For the Woolen System)

Type W-7 (average denier of about 2.5)	$.99
Type W-9 (average denier of about 4.5)	.94

Terms: Net 30 days.

Transportation Terms: F.O.B. shipping point—Freight prepaid our route within the continental limits of the U. S., excluding Alaska.

* Registered trademark of The Dow Chemical Co.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

"Orlon"* Acrylic Staple & Tow

Type 42	Staple Length	Tow Blds.	1st Grade
2.0 Denier Semidull & Bright	1¼, 1½, 2, 2½, 3, 4½	470M	1.18
3.0 Denier Semidull & Bright	1¼, 1½, 2, 2½, 3, 4½	470M	1.18
3.0 Denier Color-sealed Black	1¼, 1½, 2, 2½, 3, 4½	470M	1.43
6.0 Denier Semidull & Bright	1½, 2, 2½, 3, 4½	470M	1.14
6.0 Denier Color-sealed Black	1½, 2, 2½, 3, 4½	470M	1.39
4.5 Denier Semidull & Bright	1½, 1¼, 2, 2½, 3, 4½	470M	1.14
10.0 Denier Semidull & Bright	1½, 2, 2½, 3, 4½	470M	1.14
10.0 Denier Color-sealed Black	1½, 2, 2½, 3, 4½	470M	1.39

High Shrinkage Staple price as Regular Staple

Type 39 Semidull $.94

This product is designed for *woolen system spinning* and is a blend of deniers (average 4.2) with a variable cut length.

Type 39A Semidull $.96

This product is designed for *woolen system spinning* and is a blend of predominately fine deniers (average 2.5) with a variable cut length.

Type 39B Semidull $.94

This product is designed for *woolen system spinning* and is a blend of predominately heavy deniers (average 6.5) with a variable cut length.

Type 72 Semidull $.96

This product is designed as a blending staple with cotton for skin-contact apparel type of fabrics and is a 1.5 denier, 1½" semidull whitened staple.

Type 75 Semidull $.96

This product is designed for *Cotton/Rayon System Spinning* and is 2.5 denier, ½" semidull regular shrinkage staple.

"ORLON SAYELLE"**

Type 21—3 Denier Semidull Tow

3.0 denier semidull variable (2½" to 5" average 3¾") staple	$1.38
6.0 denier semidull variable (2½" to 5" average 3¾") staple	1.34
6.0 denier semidull tow 470M	1.38

Type 24

3.0 denier semidull variable (1" to 5" average 3") staple	$1.38

F.O.B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "ORLON" is Dupont's Registered Trade-mark for its Acrylic Fiber.

** "ORLON SAYELLE" is Dupont's Registered Trade-mark for its bi-component Acrylic fiber.

MODACRYLIC

Eastman Chemical Products, Inc.
Tennessee Eastman Co.

Current

"Verel"* Staple and Tow

All items available in both bright and dull luster in standard lengths

Denier	Type A	Type B	Type C	Type D	Type III	Type HB
3	.75	....	....	....	$0.75	$0.75
5	.75	$0.75	....	....	....	.75
8	.75	.75	....	....	....	.75
12	....	.70	$0.70	$0.70	....	.70
16	.70	.70	.70	.70	....	.70
24	....	....	.75	....	....	....

Type A—High crimp with good crimp retention
Type B—High crimp—less permanent than Type A
Type C—Medium crimp—nonpermanent—crimp easily removed
Type D—Low crimp—completely nonpermanent—fiber must be stabilized in dyeing
Type HB—Very high, very permanent crimp
Type III—Controlled shrinkage fiber

Prices are subject to change without notice.
Terms: Net 30 days. Payment—U. S. A. dollars.
Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Verel" is a trade-mark of the Eastman Kodak Co.

Union Carbide Chemicals Co.

Div. Union Carbide Corp.
Textile Fibers Dept. Effective December 1, 1959

Dynel Staple & Tow

Natural Dynel	
2, 3, 6, 12 Denier, Staple and Tow	1.10 per lb.
Liner blend, Staple only	.92 per lb.
24 Denier, Staple and Tow	1.05 per lb.
12 Denier, Type 80, Staple and Tow	.85 per lb.
3 Denier Type 63, High Shrinkage, Staple and Tow	1.15 per lb.
Dynel Spun with Colors:	
Blond, Pewter, Gray, Brown, Charcoal, Black	
3 and 6 Denier, Staple and Tow	1.20 per lb.
3 Denier Type 63, High Shrinkage, Staple and Tow	1.30 per lb.

Prices are quoted F.O.B. shipping point, freight prepaid our route, within continental limits United States, excluding Alaska and Hawaii.

Aeress Yarn

Denier & Filament	Turns/Inch & Twist	Package	Price
75-30	1.0 Z	Paper Tube	$2.10
100-40	1.0 Z	Paper Tube	2.05
150-60	1.0 Z	Paper Tube	2.00
200-80	1.0 Z	Paper Tube	1.95

Prices are quoted F.O.B. shipping point, frieght prepaid our route, within continental limits of United States, excluding Alaska and Hawaii.

NYLON

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st. Grade Price/Lb.	2nd Grade Staipe Only
1.5	200	1⅛"—4½"	None made	$1.24	$1.10
1.5	201	1⅛"—4½"	None made	1.26	1.12
2.3	420	1½" only	None made	1.24	1.10
3.0	231	1⅛"—4½"	385M	1.26	1.12
3.0	100/200	1⅛"—4½"	430M	1.24	1.10
3.0	101/201	1⅛"—4½"	455M	1.26	1.12
4.6	320	1"—6½"	None made	1.24	1.10
6.0	100	1½"—6½"	330M	1.20	1.06
6.0	101	1½"—6½"	345M	1.22	1.08
15.0	100	1½"—6½"	425M	.95	....
15.0	101	1½"—6½"	None made	.97	....
15.0	600	1½"—6½"	425M	.97	....
15.0	601	1½"—6½"	None made	.99	....

Types

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows: 1⅛, 1½, 2, 2½, 3, 4½ and 6½

Type 100 Bright, normal tenacity, not heatset.
Type 101 Bright, normal tenacity, heatset.
Type 200 Semidull, normal tenacity, not heatset.
Type 201 Semidull, normal tenacity, heatset.
Type 231 Semidull, normal tenacity, high crimp heatset.
Type 320 Bright, high tenacity, high modulus, no crimp.
Type 420 Semidull, high tenacity, high modulus, no crimp.
Type 600 Dull, normal tenacity, not heatset.
Type 601 Dull, normal tenacity, heatset.
These prices are subject to changes without notice.
Terms—Net 30 Days.
Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

OLEFIN

Beaunit Mills Inc.

Fibers Division Effective November 1, 1960

Polypropylene Bright Staple

Denier	Price per Lb.
1.5	$.90
3.0	.90
6.0	.90
15.0	.90

Staple cuts are 1½", 2" and 3".
Other lengths are available on request.
Terms: Net 30 days F.O.B. shipping point. Minimum Freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices subject to change without further notice.

Dawbarn Brothers, Incorporated

Effective June 8, 1961

Polypropylene for Outdoor Furniture Tape

Designation	Price Per Pound Average Yield Yds. per Pound	Less Than One Pallet	One Pallet And Over
DLP®57, 100FX8/0	4,500 per end	$1.15	$.80
DLP®51, 1000F/1/0	4,500	1.20	.85
DLP®51, 375/1/0	11,900	1.25	.90

Carton Weight		Average Pallet Weight
54#	1000FX8/0	650#
22#	1000F/1/0	475#
25#	375/1/0	500#

Deduction for Seasonal Shipments—Schedule:

June 1-August 31	(1st Quarter)	$.04 Per Pound
September 1-November 30	(2nd Quarter)	.02 Per Pound
December 1-February 28	(3rd Quarter)	.00 Per Pound
March 1-May 31	(4th Quarter)	.00 Per Pound

Terms:
Net 30 days, F.O.B., Waynesboro, Virginia.
Truckload Shipments (minimum 40 pallets) freight prepaid.
Less truckload shipments—freight collect.
Red yarn ..... Add $.03 per pound.
Order Acceptances:
All orders are subject to acceptance at the Home Office in Waynesboro, Virginia.
Orders of less than one pallet of a single size and color are considered for Sample and Development purposes only, and we reserve the right to refuse orders except for these purposes.

Standard Colors

100, White	431, Medium Green
331, Red	462, Dark Green
432, Turquoise	531, Yellow

All prices subject to change without notice.
"For overseas prices, see export price lists." Our export agent is the Turner Halsey Company of New York City who are now handling all world-wide exports with the exception of Canada.

Dawbarn Brothers, Incorporated

Effective July 1, 1961

Polyethylene and Polypropylene Rope Filament

(FOR CANADA SEE CANADIAN PRICE LIST)

Designation	Size	Price Per Pound Less Than One Pallet	1-119 Pallets	120-199 Pallets	200 Pallets And Over
DLP®61	3000/16	$1.16	$.81	$.80	$.79
DLP®61	182X66/20S	1.17	.82	.81	.80
DLP®60	3000/16	1.08	.73	.72	.71
DLP®60	182X66/20S	1.09	.74	.73	.72
DLP®21	3000/5/0	1.09	.74	.73	.72

DLP®61—Heat and UV Stabilized—Polypropylene
DLP®21—Heat and UV Stabilized—Polyethylene
DLP®60—Heat Stabilized Only—**Natural** (To be used as core yarn only)

Carton Weight		Average Pallet Weight
42	3000/16	500
40	3000/5	500
285	182X66/20S	570

Terms:
Net 30 days, F.O.B., Waynesboro, Virginia
Freight prepaid only on truckload shipments to shipping points East of the Mississippi River.
All less truckloads shipments freight collect.
Orange and Red material ..... Add $.03 Per Pound.
Order Acceptances:
All orders are subject to acceptance at the Home Office in Waynesboro, Va.
Orders of less than one pallet of a single size and color are considered for Sample and Development purposes only, and we reserve the right to refuse orders except for these purposes.
Orders must be completed within 90 days from first shipment.
Minimum of three weeks required for items not in inventory.

Standard Colors

Polypropylene		Polyethylene	
DLP®61-104, White	DLP®61-412, Green	110, White	410, Green
DLP®61-237, Blue	DLP®61-506, Yellow	245, Blue	511, Yellow
DLP®61-318, Red	DLP®61-701, Black	340, Red	701, Black
DLP®61-319, Orange	DLP®60-503, Natural		

Standard Colors and Sizes are cumulative on both Polypropylene and Polyethylene in full pallets only.
Above prices are subject to change without notice.
"For overseas prices, see export price lists." Our export agent is the Turner Halsey Company of New York City who are now handling all world-wide exports with the exception of Canada.

Dawbarn Brothers, Incorporated

Effective September 1, 1961

Polypropylene Monofilament Price List
(Standard Colors*)

(Price Per Pound)

Designation	Average Yield Yds. Per Lb.	Less Than One Pallet	One Pallet And Over
DLP®51, 375/1/0	11,900	$1.25	$.90
DLP®57, 270F × 24/0	16,500 per end	1.30	.95
DLP®57, 525F × 12/0	8,500 per end	1.25	.90

Carton Weight		Average Pallet Weight
56#	270F × 24/0	675
54#	525F × 12/0	650
25#	375/1/0	500

TERMS:
Net 30 days, F.O.B., Waynesboro, Virginia.
Freight collect on all less truck load shipments.
Freight prepaid on truck load shipments (40 pallets minimum).
* Red, Maroon ..... Add $.03 per pound
ORDER ACCEPTANCES:
All orders are subject to acceptance at the Home Office in Waynesboro, Virginia.
Orders of less than one pallet of a single size and color are considered for Sample and Development purposes only, and we reserve the right to refuse orders except for these purposes.

FOR CANADA

Freight collect on all shipments.
All prices quoted in United States Currency.

All Tariffs, Customs, Brokers Fees, etc. to be paid by the Purchaser. "For overseas prices, see export price lists." Our export agent is the Turner Halsey Company of New York City who are now handling all world-wide exports with the exception of Canada.

Dawbarn Brothers, Incorporated

Waynesboro, Virginia

DLP®3 Polyethylene Ribbon Price List

Designation	Price Per Pound Avg. Yield Yds. per lb.	Less Than One Pallet	One Pallet And Over
DLP®3, 1500R/1/0	2,980	$1.17	$.82
DLP®3, 850R/1/0	5,250	1.21	.86

Carton Weight		Avg. Pallet Weight
31#	1500R	500#
35#	850R	550#

Terms:
Net 30 Days, F.O.B., Waynesboro, Virginia.
Truckload Shipments (Minimum 40 Pallets) Freight Prepaid.
Less Truckload Shipments—Freight Collect.
Red Yarn ..... Add $.03 Per Pound
Order Acceptances:
All orders are subject to acceptance at the Home Office in Waynesboro, Virginia.
Orders of less than one pallet of a single size and color are considered for Sample and Development purposes only, and we reserve the right to refuse orders except for these purposes.
All prices subject to change without notice.

POLYESTER

Beaunit Mills Inc.

Current Prices Vycron Semi-Dul Polyester

	Denier	Price Per Lb.
Staple	1.5	$1.00
Staple	3.0	1.00
Staple Cuts are 1⅛" to 6".		
Tow for Converters	1.5	1.00
(Tow Bundle 200,000 Denier)	3.0	1.00

Spun Dyed Black 15¢ per lb. extra.
"Terms: Net 30 days, F.O.B. shipping point. Minimum freight allowed within the continental limits of the United States, excluding Alaska. Goods after shipment shall be a buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point. Prices are subject to change without notice."

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

"Dacron"** Staple and Tow

Denier	Luster	Type*	Length	Tow Bundle	1st Gr.
1.5	Semidull	35	1¼"-1½"	None made	$1.14
1.5	Semidull	54	1¼"-1½"	None made	1.14
1.5	Semidull	64	1¼"-3"	None made	1.24
2.25	Semidull	64	1¼"-4½"	450M	1.24
3.0	Semidull	54	1¼"-4½"	450M	1.24
3.0	Semidull	61	1¼"-4½"	None made	1.24
3.0	Semidull	64	1¼"-4½"	450M	1.24
4.0	Semidull	64	1¼"-4½"	450M	1.24
4.5	Semidull	54	1½"-4½"	450M	1.24
6.0	Semidull	54	1½"-4½"	450M	1.24
6.0	Semidull	61	1½"-4½"	None made	1.24
6.0	Semidull	64	1½"-4½"	450M	1.24

* Type:
Type 35—More Pill Resistant Staple for Cellulosic Bends.
Type 54—Semidull, Normal Tenacity.
Type 61—Industrial Staple having 45% Shrinkage. Not intended for Dyeable Uses.
Type 64—More Pill Resistant Staple, with Greater Dyeing Versatility.

"Dacron" Polyester Color-Sealed Black Staple and Tow

2.25 Color Sealed Black	64	1½"-4½"	450M	1.44
3.0 Color Sealed Black	64	1½"-4½"	450M	1.44

F. O. B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.
** Dupont's Registered Trade-mark for its Polyester Fiber.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Current

"Kodel"

Denier	HM	Types Semi-Dull I	II	S (Black Only)
1.5 staple only	$1.14	$1.14	$1.14	....
2.25 staple and tow	....	....	1.24	$1.44
3.0 "	....	....	1.24	1.44
4.5 "	....	....	1.24	1.44
6.0 "	....	....	1.24	....
8.0 "	....	....	1.24	....

Terms: Net 30 days. Payment—U. S. A. dollars.
Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.
* "Kodel" is a trade-mark of the Eastman Kodak Company.

Celanese Fibers Company

Current Prices Effective April 14, 1961

*Fortrel Polyester Staple and Tow

Staple

Denier	Luster	Price
1.5	Semi-dull	$1.14
3	Semi-dull	1.24
4.5	Semi-dull	1.24
6	Semi-dull	1.24

Staple lengths 1½", 2" and 3".
All staple packaged in 500 pound bales.

Tow

Denier	Luster	Price
3	Semi-dull	$1.24
4.5	Semi-dull	1.24
6	Semi-dull	1.24

Total denier of all tow is 225,000.
All tow packaged in 300 to 400 pound cartons.
TERMS: Net 30 days. F.O.B. destination—Freight prepaid our route within the continental limits of the United States, excluding Alaska. Prices subject to change without notice.
* Registered Trademark of Fiber Industries Inc.

VINYON

American Viscose Corp.

Effective October 1, 1956

Avisco Vinyon Staple

1.5 denier 1½" Unopened	$.90 per lb.
3.0 denier ½" Unopened	.80 per lb.
3.0 denier 1¼" Unopened	.80 per lb.
3.0 denier 1¼" Opened	.90 per lb.
3.0 denier 2" Opened	.90 per lb.
5.5 denier 1" Opened	.90 per lb.
5.5 denier 1½" Unopened	.80 per lb.

Terms: Net 30 days.

SARAN

The National Plastics Products Company—Fibers Division Odenton, Maryland

Current Prices:

Saran Staple

Type	Denier	Natural	Colors
2Y—Upholstery	22	$0.70	$0.75
2Y—Upholstery	16	.74	.79
3Q—Industrial Fabrics	22	.68	.72
1C—Carpets	22	.68	.72
1M—Mops	22	.68	.72

In any staple length 1¼ to 6". Also 45 denier, 7" cut.
F.O.B. Odenton, Maryland.
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1961

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MODERN TEXTILES MAGAZINE

Calendar of Coming Events

Oct. 4—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Oct. 5-6—North Carolina Textile Manufacturers Assoc. annual meeting. Carolina Hotel, Pinehurst, N. C.
Oct. 5-6—Textile Quality Control Assoc. Sedgefield Inn, Greensboro, N. C.
Oct. 7—Alabama Textile Operating Executives, fall meeting. Thach Auditorium, Auburn, Ala.
Oct. 11-13—Quartermaster Association national convention. Biltmore Hotel, Atlanta, Ga.
Oct. 11-13—Fiber Society meeting. West Point, N. Y.
Oct. 11-21—International Knitting Machinery Exhibition. Belle Vue Hall, Manchester, England.
Oct. 14—South Carolina Div. STA. Clemson, S. C.
Oct. 14—Textile Operating Executives of Georgia. Georgia Tech, Atlanta, Ga.
Oct. 26—Textile Salesmen Association annual fall luncheon. Statler Hilton Hotel, New York, N. Y.

Nov. 1—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Nov. 1-2—ASME Textile Engineering Div. annual meeting. Massachusetts Inst. of Technology, Cambridge, Mass.
Nov. 8-9—Chemical Finishing Conference. Sheraton Park Hotel, Washington, D. C.
Nov. 9—Thread Institute annual meeting. Hotel Commodore, New York, N. Y.
Nov. 13-15—Narrow Fabrics Institute, Inc. meeting. Statler-Hilton, New York, N. Y.
Dec. 6—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.

1962
Jan. 3—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.

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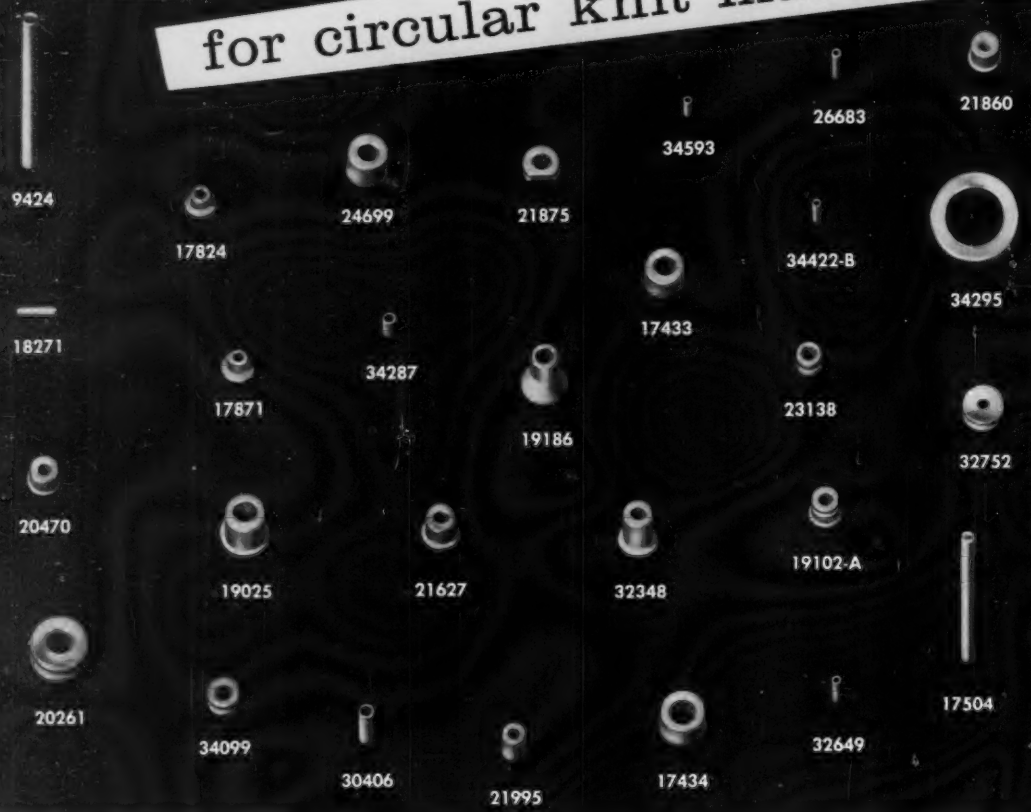

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